DOCUMENT RESUME

ED 179 520 SP 015 042

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TITLE	Venereal Diseases: A Teachers' Guide.
INSTITUTION	Iowa State Dept. of Health, Des Moines.; Iowa State Dept. of Public Instruction, Des Moines.
PUB DATE	Mar 79
NOTE	72p.; For related document, see SP 015 041
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Communicable Diseases; *Disease Control; Health Education; Learning Activities; *Sex Education; *Teaching Methods; *Venereal Diseases

ABSTRACT

Guidelines are given to aid health teachers and school administrators in setting up an effective venereal disease education program. Various learning activities are suggested, along with sample questions students may ask. (LH)

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VENEREAL DISEASES

A Teachers' Guide

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March, 1979

Cover Art Work Courtesy of WHO Broadcasting

SP015042

Office of the Governor
STATE CAPITOL
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ROBERT D. RAY
GOVERNOR

Teachers and Fellow Citizens:

If today's students understand the principles of preventing disease and practicing good health care, they and all our society will benefit.

We now have a law that requires the characteristics of communicable diseases, including venereal diseases, be taught in Iowa's schools. We hope this will aid students in understanding how disease may be avoided.

A Task Force which I appointed has made excellent progress in increasing public awareness of venereal diseases. This curriculum guide is the result of one of its recommendations. It was prepared to furnish teachers with current technical information and guidance for instructing students about these serious health problems.

I encourage this effort and I look forward to the benefits that will follow in the form of wider understanding and continued progress in the control of venereal diseases in Iowa.

Sincerely,

Robert D. Ray
Governor

RDR/pm

Acknowledgements

This teachers' guide is indebted to the California publication, "Suggestions for Instruction About Gonorrhea and Syphilis in Junior and Senior High Schools," for its method of presentation, and to the Texas "Venereal Disease Teacher's Curriculum and Resource Guide" for some examples.

The only recognition available to those teachers whose thoughtful comments were made in the course of workshops held around the state, is to find their ideas reflected in the body of the text without specific acknowledgement to them by name. In addition, many teachers and some school nurses have made helpful contributions to this guide, as have health professionals who have reviewed successive versions for accuracy and have supplied data, explanations, insights and forecasts. Sincere appreciation and thanks go to them all.

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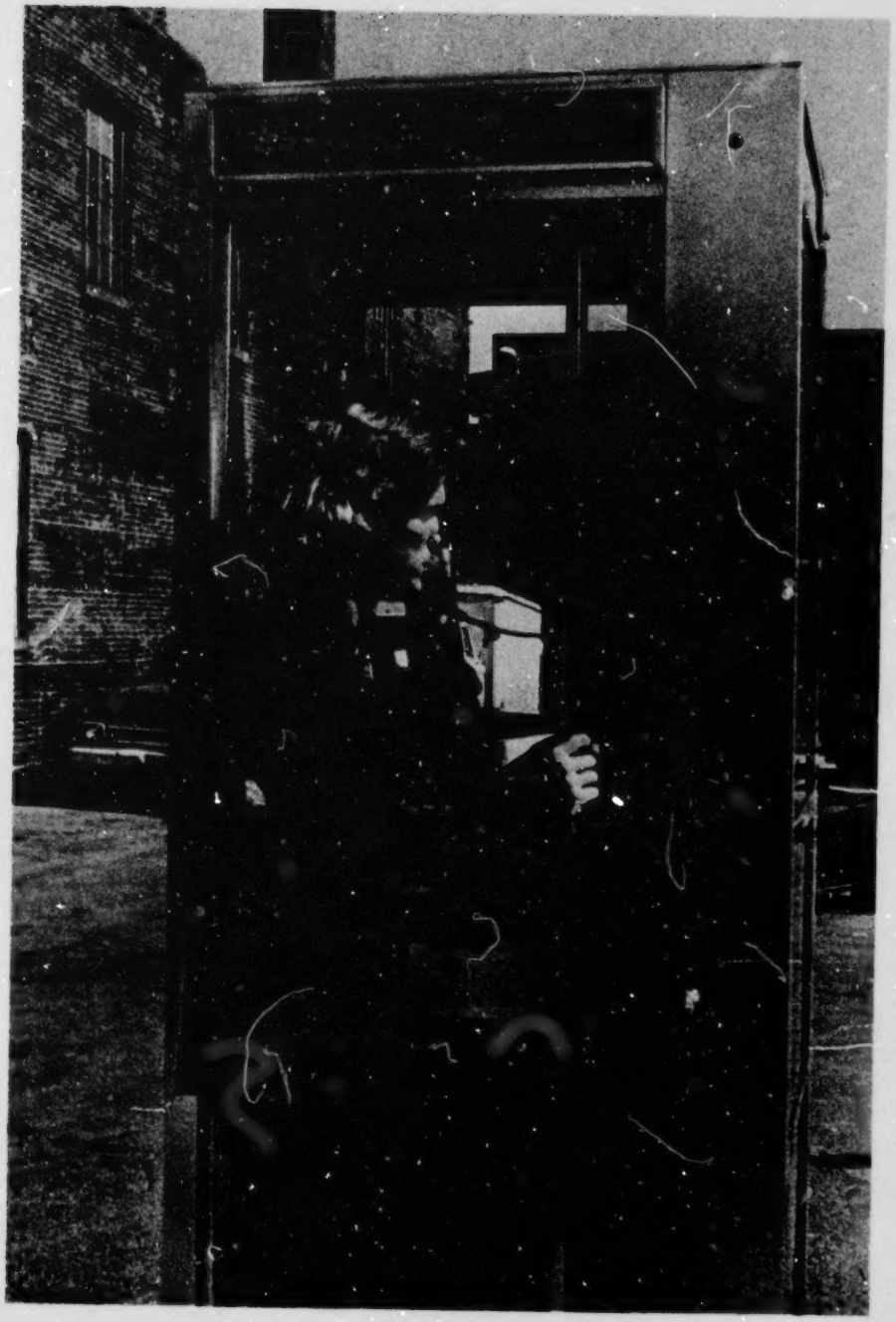

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Introduction

"Venereal Diseases, A Teachers' Guide" is designed as a companion to the earlier publication, "Venereal Disease, A Resource Guide," and comes in response to teachers who felt a need for more structure in their VD lessons than was provided by the Resource Guide.

The Teachers' Guide and Resource Guide jointly include a compilation of information which should minimize the amount of research necessary for anyone preparing lessons on venereal diseases. Data in the tables and charts of the Resource Guide are kept current by periodic updating of the publication.

Venereal Diseases in the Plural

The switch from the singular form in "Venereal Disease, A Resource Guide," to the plural in "Venereal Diseases, A Teachers' Guide," represents a deliberate change in approach.

Except when referring to a single disease or a single concept, the plural form, venereal diseases (VD), is used consistently throughout this text. This is to heighten awareness that syphilis and gonorrhea are separate diseases and to indicate the existence of other sexually transmitted diseases (STD).

The Study of Venereal Diseases in the Curriculum

Ideally, instruction about venereal diseases should be part of such subject areas as biology, personal & family life, health education and current social problems.

Venereal disease instruction should not be a crash program or special school assembly. Whenever possible, the study of venereal diseases should be a routine part of existing courses of study without segregation of the sexes or any other condition which would place venereal diseases in a special category.

The number of lessons varies according to the context in which the instruction is offered and how much previous knowledge about venereal diseases students have. Most teachers find students deeply interested in the subject and find that three to five class periods at both the junior high and the senior high level should be provided.

Content for Particular Grade Levels

Students are at so many different stages of development and understanding that it is impossible to impose specific objectives for each individual grade level. At whatever grade level, the essential concepts for students to grasp are that:

1. **Venereal diseases are serious communicable diseases which reach epidemic proportions in the young.**
2. **Gonorrhea and syphilis are two separate venereal diseases with different symptoms and different effects. Most other sexually transmitted diseases (STD) produce symptoms that are similar to those of either syphilis or gonorrhea.**
3. **Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.**

The framework of the course outlined on pages 8 and 9 lists several objectives for each concept, and the body of the text suggests related content, class activities and evaluations.

Beyond this, the teacher must decide on realistic objectives for a particular group at any stage. Class activities and discussions suggested with the objectives and with each discussion topic lend themselves to treatment at various levels.

District school administrators and teachers may wish to develop a district-wide plan for coordinated instruction of venereal diseases.

Criteria for Selecting a Teacher

Ideally, teachers of this subject matter should be knowledgeable about the subject, and comfortable about discussing venereal diseases and sexual activity. They should have rapport with the students and be able to handle a group discussion with ease. Some schools elect to teach venereal diseases in the context of say, English literature, if the English teacher is the kind of individual described. More usually, it is the health or biology teacher, though frequently the school nurse comes into the classroom and team teaches alongside the class teacher.

Inservice Training

Programs of inservice training for teachers should precede instruction about venereal diseases. Workshops will be arranged upon request by the Iowa State Department of Health.

Framework

The framework for the course consists of: (1) preliminary activities (2) the three basic concepts which all students should master, and their associated objectives phrased in terms of what students should be able to perform as a result of the course of instruction (3) discussion topics which assume an understanding of the mechanics of VD transmission and deal with broader issues of responsibility in VD control and (4) concluding activities.

PRELIMINARY ACTIVITIES:

Pre-test the level of student information.
Identify students' questions and concerns.

CONCEPT 1.

Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

Objective A. Sketch the infectious disease cycle in the transmission of disease.

Objective B. Describe the transmission of venereal diseases.

Objective C. State the venereal disease problem in terms of your state, locality and age group.

Objective D. Be aware of the existence of a variety of sexually transmitted diseases (STD).

CONCEPT 2.

Gonorrhea and syphilis are two separate venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.

Objective A. List the symptoms, or their absence, of gonorrhea in the male and in the female.

Objective B. Describe the complications caused by untreated gonorrhea in the male and female.

Objective C. Outline the progressive symptoms and complications caused by untreated syphilis infection.

Objective D. List the most significant STD according to symptoms.

Objective E. Inquire into myths about venereal diseases.

CONCEPT 3.

Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.

Objective A. Identify tests for the detection of gonorrhea and syphilis.

Objective B. Describe treatments for gonorrhea and syphilis.

Objective C. List methods of preventing venereal diseases.

Objective D. List all treatment centers available to your community.

DISCUSSION TOPICS:

I. The individual and the community share responsibility in the control of venereal diseases.

II. How significant are Iowa laws relating to venereal disease prevention and control?

III. How significant is (a) education (b) case detection in the control and prevention of venereal diseases?

IV. List possible reasons for the epidemic rise in gonorrhea infection at a time when other communicable diseases are under control.

CONCLUDING ACTIVITIES:

Insure that all questions are answered. Administer post-test. Administer course evaluation.

Preliminary Activities

Administer a pre-test, such as the one in "Venereal Disease, A Resource Guide," p. 35.

The difficulty of the pre-test may be adjusted according to whether the course is an early exposure to veneral diseases for a group or if the students feel they "know all about venereal diseases."

If the teacher so chooses, pre-tests need not be signed or handed in as long as all questions are fully answered by the end of the course.

Show one film, such as:

- A Half Million Teenagers...Plus (good introduction, featuring teenagers coping with VD)
- VD...Attack Plan (animated cartoon with a great deal of information suitable for junior high students as well as older groups)
- VD Questions, VD Answers (factual, concise, clear, description plus some historical background, using animated drawings)

Resist the temptation to show more than one film. The following movies, each excellent in its own way, are recommended only for students already fully familiar with gonorrhea and syphilis. (For instance, one of the films might be shown in response to a question in the context of the later Discussion Topics.) All deal with other sexually transmitted diseases (STD) in addition to gonorrhea and syphilis — a great deal of content for a short film — and emphasize the importance of medical treatment. The message of exclusively sexual transmission and available prevention and cure, which this Teachers' Guide attempts to emphasize is inevitably somewhat diffused when additional sexually transmitted diseases are included in the discussion.

- VD: Old Bugs, New Problems (20 mins., color, sound, set in Los Angeles). Groups of teenagers of various ethnic origins discuss different STD among themselves. Each question is then clearly answered by a teacher, doctor or a nurse.

- VD QUIZ: Getting the Right Answers (25 mins., color, sound. American Educational Film) Hot line terminal setting conveys urgency in a film set among young adults caught in vignettes of everyday life. Their uncertainties about STD are posed as questions in a quiz, with clear answers to each provided by the narrator.
- VD: What Is It? (20 mins., color, sound. Churchill Films) In a classroom setting a teacher and teenage students of varied ethnic backgrounds discuss STD. The format is challenging and some questions are left unanswered to promote discussion.

There are various ways of overcoming students' hesitancy in expressing questions.

- Blank cards on which students are asked to write their questions anonymously.

  The cards are placed in a question box, and the teacher reads out each question before discussing it.
- Alternatively, the cards may be collected at the end of a session for discussion at the following class meeting; they are shuffled and re-distributed so the students read out someone else's question for general discussion.
- Another method of starting discussion is to provide students with the opportunity to respond to the following words, phrases or statements:
  1. Syphilis
  2. Gonorrhea
  3. Venereal diseases hurt everybody.
  4. If I thought I had a venereal disease, I would. .
  5. Venereal diseases are a status symbol.
  6. Young people who do not engage in sex before marriage are...

Note the questions to insure that all will be answered by the end of the unit.

RESOURCE

"Venereal Disease, A Resource Guide," capsule film descriptions and Area Media Centers listing, pp. 24-28.

Films are available free of charge to schools, interested individuals and groups from the Iowa State Film Library (515) 281-4316 and also from the Area Media Centers, which lend film strips as well.

At press time films dealing with STD are available only from the Iowa State Film Library; however, requests for them to Area Media Centers may make them more widely available.

CONCEPT 1. **Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.**

Objective A. **Sketch the infectious disease cycle in the transmission of disease.**

RELATED CONTENT

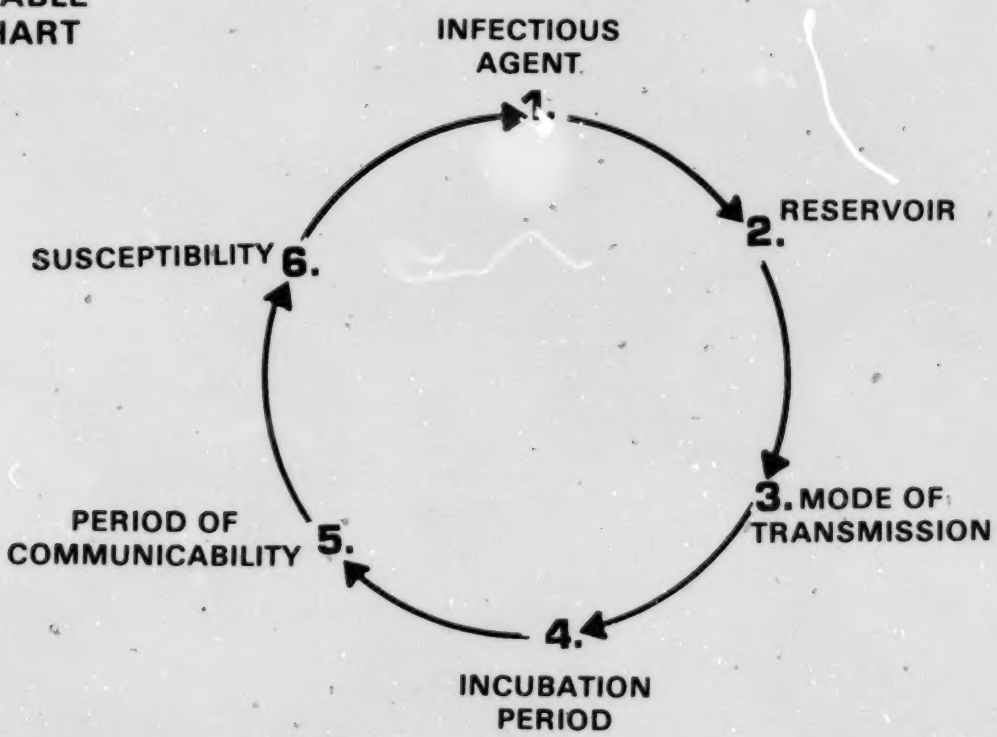
Terms used in this section are defined in the glossary in the appendix of this publication.

For students for whom this course is a first introduction to the study of venereal diseases, lengthy treatment of the infectious disease cycle is not recommended. Establishing that venereal diseases are infectious diseases with similarities to other infectious diseases is all that is required at this point.

With students already familiar with the basics of VD and an interest in biology and immunology, the definitions in the glossary might give rise to discussion and speculation.

By law, 45 selected communicable diseases must be reported to the Iowa State Department of Health. Some of the more common communicable diseases are: polio, mumps, hepatitis, measles, rubella, chickenpox, strep infection, gonorrhea, syphilis, rabies, tuberculosis, influenza, etc.

COMMUNICABLE DISEASE CHART



Use measles as an illustration of a typical communicable disease:

1. Infectious agent - measles virus
2. Reservoir - humans
3. Mode of transmission - by droplets spread or direct contact with secretions of nose, throat, urine of infected person.
4. Incubation period - 8 to 13 days from exposure to initial fever; about 14 days to appearance of rash (sometimes up to 21 days).
5. Period of communicability - from about one week after exposure until four days after rash appears.
6. Susceptibility and resistance:
   a. Practically everyone is susceptible.
   b. Persons who have had immunization are not susceptible.
   c. Permanent immunity is usual after an attack.

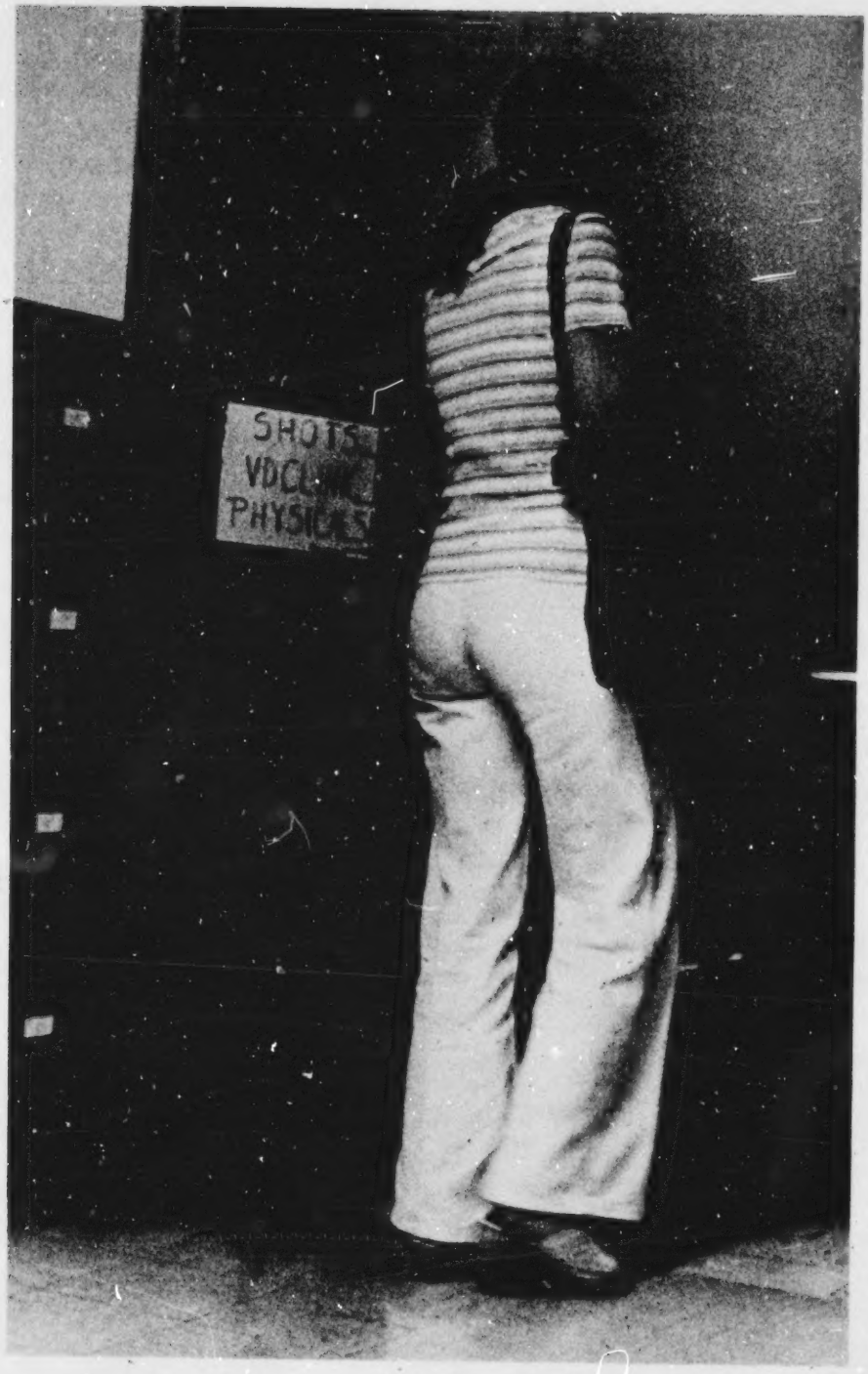
Diseases must be reported since they pose a threat to public health. The source of a communicable disease must be traced and eliminated in order to prevent its further spread — which could otherwise cause an epidemic.

When the reservoir of infection is contaminated food, water, an insect or a pest, modern methods of sanitation make it comparatively easy to eliminate.

When the reservoir of infection are human beings and a vaccine is available, then immunization programs prevent the disease from spreading.

When the reservoir of infection are human beings, and no vaccine exists, then the only way to prevent the disease from spreading is by treating all infected persons and all others coming into contact with their infection. This is where reporting of every case of infection and contact tracing, i.e., source-spread tracing, are of key importance.

In addition, reports are used for research purposes and for evaluating new control measures.


SHOTS
PHYSICS

CONCEPT 1. Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

Objective A. (contd.) **Sketch the infectious disease cycle in the transmission of disease.**

SUGGESTED CLASS ACTIVITY

Discussion may be promoted by breaking up class into discussion groups of 8 or less.

Have the class join in compiling a list of reportable communicable diseases and in discussing why diseases should be reported.

Mention could be made of epidemics students have heard about (polio, influenza. rubella [German measles], whooping cough, smallpox, typhus, typhoid, rubeola, diphtheria and mumps.)

Have the students list all of the "communicable diseases" they have had in their life while the teacher keeps a blackboard tally.

Using a chart of the communicable disease cycle, provide students with a chance to clarify their understanding of each part of the cycle.

SUGGESTED EVALUATION

Give each student a list of five major communicable diseases and the number of cases of each reported in Iowa during a recent year.

Ask the students to make a comparison of the five diseases in pictorial, graphic or written form.

The students' representations of these comparisons should indicate the following:

- Gonorrhea is a very common communicable disease.
- Syphilis is much less prevalent than gonorrhea.
- In Iowa, gonorrhea alone is more prevalent than the sum of all other reportable communicable diseases listed below it in the Resource Guide appendix (p. 80).

RESOURCES

"Venereal Disease, A Resource Guide," glossary of terms, pp. 32-34; glossary pp. 65, 66 in this publication. For state and national figures, "Venereal Disease, A Resource Guide," appendix pp. 74-84. Also:

Local Health Department for local incidence figures. Venereal Disease Control Section, Iowa State Department of Health, Lucas Office Building, Des Moines, Iowa 50319

CONCEPT 1. Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

Objective B. **Describe the transmission of venereal diseases.**

RELATED CONTENT

The germs of venereal diseases are passed directly from human to human during intimate sexual contact with an infected person. (Kissing, petting and feeling do not spread venereal disease infections; they are most often spread by sexual intercourse; i.e., genital to genital contact; also by genital-oral; and by genital-anal contact.)

In venereal diseases, the human is the carrier as well as the host of the bacterium. Gonorrhea and syphilis are the most frequently occurring reportable venereal diseases in the United States.

I. Gonorrhea - most common reportable venereal disease in in the United States.
   1. Infectious agent - Neisseria gonorrhoeae
   2. Reservoir - humans
   3. Mode of transmission
      a. Through sexual intercourse or other intimate sexual contact with an infected person.
      b. From an infected mother to the eyes of newborn infant.
   4. Incubation period - usually 3 to 9 days in males; in females the incubation period is not well defined.
   5. Period of communicability - for indeterminate period unless interrupted by treatment
   6. Susceptiblity and resistance
      a. Susceptiblity is universal.
      b. Immunization is not yet available.

NOTE: Although gonorrhea and syphilis may occur in the newborn, they are not hereditary conditions, but conditions which are transmitted congenitally to the fetus in the womb before birth or to the infant during birth.

Electron micrograph of *Neisseria gonorrhoeae*, a gonococcus

II. Syphilis
1. Infectious agent - Treponema pallidum, a spirochete (spiro-keet)
2. Reservoir - humans
3. Mode of transmission
   a. Through intimate sexual contact with an infected person (most often through sexual intercourse)
   b. May also be passed from the bloodstream of a mother to her unborn child anytime after the 18th week of pregnancy
4. Incubation period - 10 to 90 days (average is 21 days)
5. Period of communicability
   Through sexual contact - usually 6 months, occasionally longer
6. Susceptiblity and resistance
   a. Susceptibility is universal.
   b. Immunization is not yet available.

Treatment for venereal diseases can only be given when the infected persons are referred to, or volunteer for, medical examination.

SUGGESTED CLASS ACTIVITY

Conduct lecture-discussion on the transmission of venereal diseases, dealing specifically with gonorrhea and syphilis.

Discussion topic: Why are venereal diseases more difficult to control than measles?

Have students discuss how to control venereal diseases in terms of the infectious disease cycle. (Treatment must be given to those who have the disease, who have been exposed or who may be incubating the disease.)

Discuss where in the infectious disease cycle the use of a condom may interrupt the spread of venereal diseases.

Electron micrograph of *Treponema pallidum*, a spirochete

CONCEPT 1. Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

Objective C. **State the venereal disease problem in terms of your state, locality and age group.**

RELATED CONTENT

Gonorrhea ranks first among reportable communicable diseases in the United States. In 1977 a total of 998,000 cases were reported nationwide.

Syphilis ranks third (exceeded by chickenpox and gonorrhea) among the reportable communicable diseases nationwide.

In Iowa, in 1977 a total of 5,791 cases of gonorrhea were reported and 256 cases of syphilis (of which almost 200 were non-infectious; i.e., treated at a time when symptoms had already disappeared).

Nationally, the age group at greatest risk of gonorrhea infection is the young adult (20 to 24 years of age) group; teenagers (15 to 19 years of age) are the second highest risk group.

SUGGESTED CLASS ACTIVITY

Delegate class members to obtain county, city or regional gonorrhea and syphilis figures from your county or regional health department. Inquire about incidence figures for males and females, and also for age-specific statistics.

Compare Iowa figures with national ones; city or county statistics with comparable state figures. Discuss any discrepancy in the order of reportable communicable diseases in Iowa compared with the nation as a whole. (Although it is extremely serious, the venereal disease epidemic in Iowa is not as overwhelming as it is in some other states.)

RESOURCES

"Venereal Disease, A Resource Guide" pp. 76-84 Appendix. For local morbidity figures, contact county or regional health departments, pp. 12-14 of "Venereal Disease, A Resource Guide"; or Venereal Disease Control Section, Lucas State Office Building, Des Moines, Iowa 50319.

CONCEPT 1. Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

Objective D. **Be aware of the existence of a variety of sexually transmitted diseases (STD).**

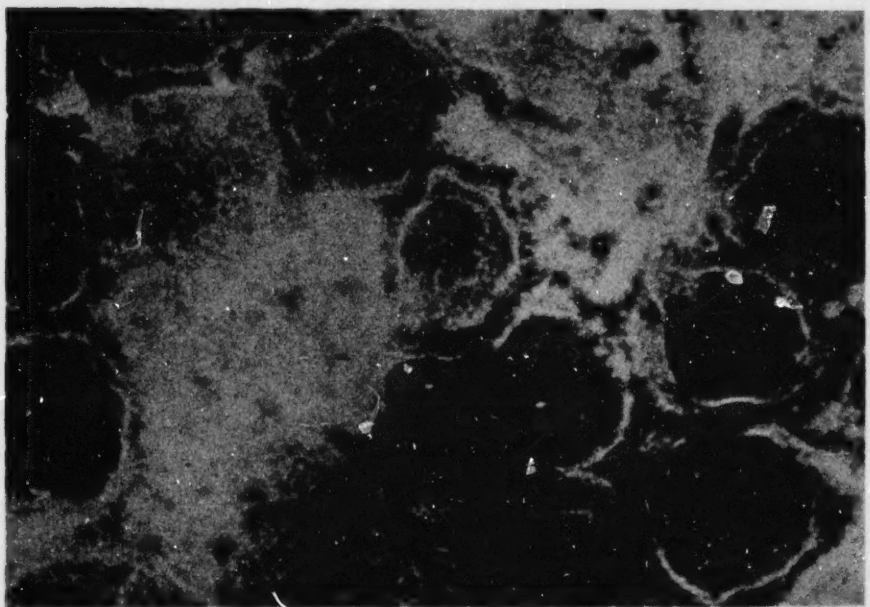
RELATED CONTENT

Recent research has brought about greater understanding of the sexually transmitted diseases (STD). Information for the teacher's use is summarized below. (See Suggested Class Activity, p. 27.)

With the exception of the three "minor venereal diseases," STD are not reportable; hence, incidence figures are estimates.

I. GENITAL HERPES

1. *Infectious agent* - a virus, most usually herpes simplex-type 2, sometimes herpes simplex-type 1 which causes fever blisters or cold sores.
2. *Reservoir* - humans
3. *Mode of transmission* - virus is present in fluid of skin lesions, saliva and urogenital tract of infected individual. In addition to sexual transmission, genital herpes is transmitted by close human contact, by autionoculation from other infected parts of the body, from infected mother to newborn child during passage through the birth canal, or if the membranes have ruptured, by the virus ascending to infect the baby.
4. *Incubation period* - 2 to 9 days
5. *Period of communicability* - duration of active infection which may be with or without lesions noted by the patient or the doctor.
6. *Susceptibility and resistance* - Susceptibility seems to be universal though some individuals tend to have very infrequent recurrences, and others quite frequent ones. Immunization not yet available.



Electron micrograph of *Herpes simplex* virus

7. *Additional considerations*
   a. *Incidence* - estimated 300,000 cases annually in U.S.A.
   b. *Symptoms* - painful blisters and ulcers in the genital area. Often there are no symptoms. Lesions tend to disappear in 1-2 weeks, but virus may remain hidden and infection recur in same area weeks or years later.
   c. *Treatment* - no known cure at present.
   d. *Complications* - primary infection early in pregnancy occasionally may cause abortion or premature birth. Infection of an infant during its passage through the birth canal may cause a crippling, often fatal disease. When genital herpes is diagnosed around the time of delivery in a pregnant woman, the baby is usually delivered by caesarean section.

      A connection is suspected between genital herpes and cervical cancer, although it has not yet been proved. Women with genital herpes are advised to have Pap smears to detect cancer every 6 to 12 months.
   e. *Prevention* - avoid sexual contact with anyone who has active herpes lesions.

II. NON-GONOCOCCAL URETHRITIS (NGU) - also known as as Non-Specific Urethritis (NSU)
   1. *Infectious agents* - more than one; chiefly they are unusual bacteria called chlamydia (klamidia), which are responsible for about half of NGU infections. The cause of the remaining infections is not yet known.
   2. *Reservoir* - humans
   3. *Mode of transmission* - through sexual intercourse with infected person
   4. *Incubation period* - thought to be somewhat longer than gonorrhea, which is 3 to 9 days
   5. *Period of communicability* - not yet known
   6. *Susceptibility and resistance*
      a. Susceptibility seems to be universal.
      b. Immunization not yet available.
   7. *Additional considerations*
      a. *Incidence* - an estimated 2.5 million men are infected with NGU (the number of infected women is unknown) in the U.S.A.
      b. *Symptoms* - similar to those in early gonorrhea, perhaps less severe, for males (i.e. discharge from penis, painful urination); for females there may be no symptoms, or there may be an unusual discharge or bleeding, but often disease is not suspected until a a baby is born with an eye infection.

CONCEPT 1. Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

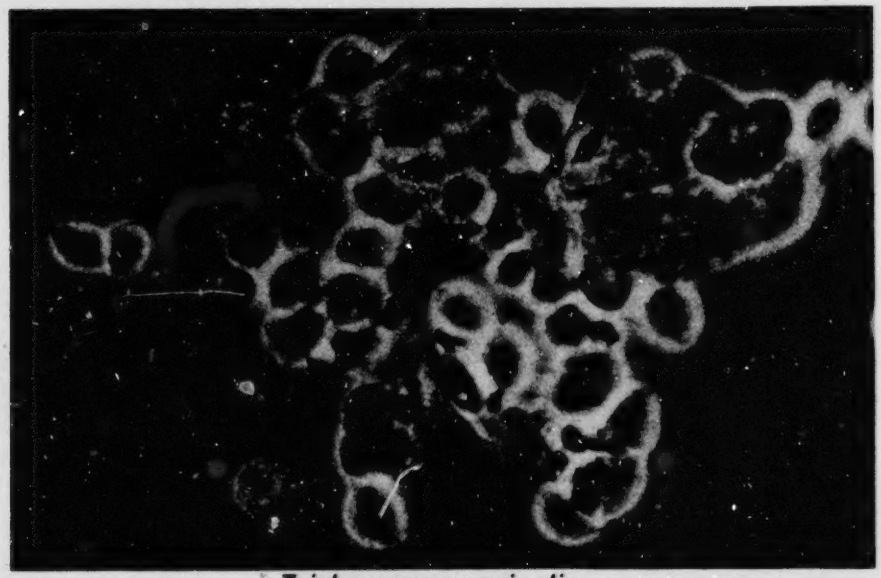
Objective D. (contd.) **Be aware of the existence of a variety of sexually transmitted diseases (STD).**

c. *Treatment* - NGU does not respond to penicillin, but does respond to other antibiotics, such as tetracyclene. Because of the similarity between the two diseases, and because NGU does not respond to penicillin, cases may be inaccurately diagnosed as drug-resistant gonorrhea.
The persistence of symptoms after proper treatment for gonorrhea, is called post-gonococcal urethritis. This often responds to other antibiotics, because the original infection may have been a combination of gonorrhea and NGU.

d. *Complications* - apart from eye infections and possible blindness in infants born of infected mothers, none known. Many untreated cases seem to cure themselves.

III. TRICHOMONIASIS (trik-o-mo-ni'ah-sis) - causes inflammation of vagina called vaginitis

1. *Infectious agent* - a protozoan (a single-celled organism) Trichomonas vaginalis, which is a parasite
2. *Reservoir* - humans
3. *Mode of transmission* - in addition to direct sexual contact which is the most common; non-sexual transmission from a contaminated object such as a towel is possible, since the parasite may survive up to 24 hours in moisture; a newborn child may acquire a genito-urinary infection during passage through an infected mother's birth canal.



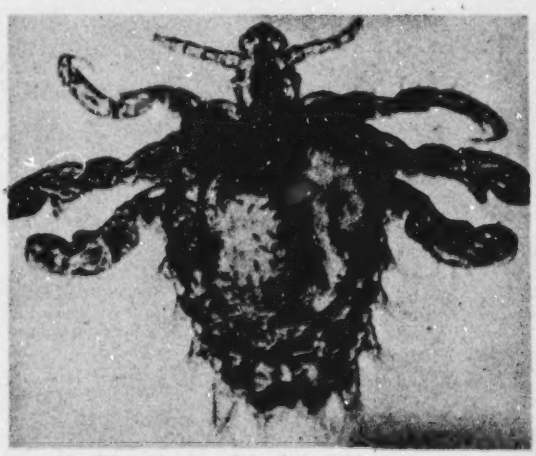
Trichomonas vaginalis

4. *Incubation period* - 4 to 20 days, average 7 days
5. *Period of communicability* - duration of infection
6. *Susceptibility and resistance* - general susceptibility, but clinical symptoms occur mainly in women; men are usually asymptomatic.
7. *Additional considerations*
   a. *Incidence* - 2.5 to 3 million women annually in the U.S.A.
   b. *Symptoms* - vaginal lesions and discharge
   c. *Treatment* - available; given to both sex partners
   d. *Complications* - Trichomoniasis can confuse evaluation of a Pap smear for cervical cancer; the drug used for treatment, metronidazole, should not be used in early pregnancy.

IV. CANDIDIASIS (kandi-di'ah-sis) - also known as Monilia or Thrush (also causes vaginitis)

1. *Infectious agent* - Candida albicans, a yeast like fungus
2. *Reservoir* - humans
3. *Mode of transmission* - usually non-venereal; e.g.; by wet towel
4. *Incubation period* - variable
5. *Period of communicability* - for duration of lesions
6. *Susceptibility and resistance* - Candida species are found in healthy people, which suggests a widespread distribution. The yeast tends to become a disease when the body's resistance is lowered, or the ecological balance of the vagina is upset.
7. *Additional Considerations*
   a. *Incidence* - one of the more frequent causes of vaginitis after Trichomoniasis
   b. *Symptoms* - a vaginal discharge and inflammation
   c. *Treatment* - available; often removing cause of debility will cure the disease.

V. CRABS - infectious agent is Phthirus pubis or the crab louse; in addition to sexual transmission, lice may be spread by contact with infested clothes or bedding. Treated with specific ointments and shampoos available without prescription at most pharmacies.

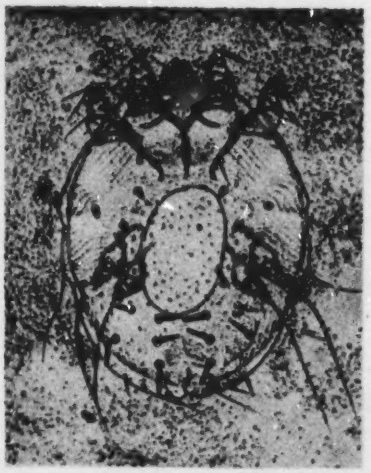


Phthirus pubis, the pubic louse

CONCEPT 1. Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

Objective D. (contd.) **Be aware of the existence of a variety of sexual transmitted diseases (STD).**

VI. SCABIES - infectious agent is the scabies mite; transmission is not necessarily sexual; may also be transmitted under poor conditions of hygiene. Advisable to see physician for diagnosis and treatment with specific disinfectants. Clothes and bedding must also be washed, dry-cleaned or ironed to destroy the mites.



Sarcoptes scabiei, adult female scabies mite

VII. CONDYLOMA ACUMINATUM or venereal warts

1. *Infectious agent* - wart virus
2. *Reservoir* - humans
3. *Mode of transmission* - through sexual intercourse with infected person
4. *Incubation period* - one to 20 months; average about 4 months
5. *Period of communicability* - unknown, but probably as long as warts are visible
6. *Susceptibility and resistance*
   a. Sexually active young adults seem to be most susceptible.
   b. Immunization not yet available.
7. *Additional considerations*
   a. *Incidence* - estimated 700,000 cases annually in U.S.A.
   b. *Symptoms* - large, moist, fast growing warts in genital area
   c. *Treatment* - medication applied locally, possibly surgery. Warts often disappear spontaneously after a period of months. It is important to seek medical attention promptly rather than attempting self-treatment.
   d. *Complications* - While warts generally present only cosmetic difficulties, they sometimes grow to the point of blocking excretory functions, and one form has been implicated in malignancies.

VIII. CYTOMEGALOVIRUSES (CMV)

1. *Infectious agents* are viruses in the same group as the herpes simplex viruses, and like them, these may infect infants.
2. *Reservoir* - humans
3. *Mode of transmission* - not yet clear, but the virus is found more frequently in the cervix and on sperm cells of sexually active persons than in pre-adolescents or celibates.
4. *Incubation period* - not fully understood
5. *Period of communicability* - information as yet incomplete
6. *Susceptibility and resistance*
   a. Susceptibility is nearly universal.
   b. Immunization not yet available.
7. *Additional considerations*
   a. *Incidence* - worldwide
   b. *Symptoms* -rare; there are few, if any, symptoms in most adults.
   c. *Treatment* - not yet known
   d. *Complications* - CMV is an important cause of birth defects, such as mental retardation, blindness and deafness.

IX. HEPATITIS B or serum hepatitis

1. *Infectious agent* - a virus which infects the liver
2. *Reservoir* - humans
3. *Mode of transmisssion* - chiefly through contaminated blood or needles in injections or transfusions; but also sexual. Virus is present in body fluids such as saliva, semen, urine as well as in blood.
4. *Incubation period* - 6 weeks to 6 months
5. *Period of communicability* - may be years; some people may be carriers without having suffered an attack.
6. *Susceptibility and resistance*
   a. Susceptibility is general; usually the disease is milder in children.
   b. Immunization not yet available.
7. *Additional considerations*
   a. *Incidence* - worldwide
   b. *Symptoms* - nausea, fever, jaundice (yellowing of skin)
   c. *Treatment* - none known as yet (Avoid close contact with anyone infected or recently infected.)

CONCEPT 1. Venereal diseases are serious communicable diseases, reaching epidemic proportions in the young.

Objective D. (contd.) **Be aware of the existence of a variety of sexually transmitted diseases (STD).**

The following 3 STD are the "minor venereal diseases," which are reportable by law, and whose characteristics are well known. Their incidence in the U.S.A. is quite rare.

X. CHANCROID

1. *Infectious agent* - Ducrey bacillus
2. *Reservoir* - humans
3. *Mode of transmission* - through sexual intercourse with infected person
4. *Incubation period* - 3 to 5 days (sometimes up to 14)
5. *Period of communicability* - usually a matter of weeks; as long as infectious agent persists in lesions or in lymph nodes
6. *Susceptibility and resistance*
   a. Susceptibility is general.
   b. No evidence of natural resistance.
7. *Additional considerations*
   a. *Incidence* - rare in temperate zones and in U.S.; more common than syphilis in seaports in the tropics
   b. *Symptoms* - painful sores and ulcers, usually on the genitals, along with swollen lymph nodes
   c. *Treatment* - sulfonamides or tetracycline

XI. LYMPHOGRANULOMA VENEREUM (LGV)

1. *Infectious agent* - Chlamydia trachomatis (bacteria related to those causing NGU)
2. *Reservoir* - humans
3. *Mode of transmission* - organism is present in open lesions; in addition to sexual transmission, may be passed by indirect contact with bedclothes
4. *Incubation period* - various; 5 to 21 days for primary lesion; sometimes up to several months
5. *Period of communicability* - varies from weeks to years
6. *Susceptibility and resistance*
   a. Susceptibility is general.
   b. Status of natural or acquired resistance is unclear.
7. *Additional considerations*
   a. *Incidence* - endemic in tropical and subtropical parts of U.S.A., Asia and Africa, especially among lower socioeconomic classes

b. *Symptoms* - may begin with small painless sore, usually on sex parts or with swollen lymph glands, along with fever, aches, pain; can culminate in bubos, gross enlargement of genitals, rectal stricture
c. *Treatment* - antibiotics, such as tetracycline

XII. GRANULOMA INGUINALE (GI)

1. *Infectious agent* - Donovania granulomatis
2. *Reservoir* - humans
3. *Mode of transmission* - by direct contact with open lesion in sexual contact
4. *Incubation period* - unknown; 8 to 80 days
5. *Period of communicability* - unknown; probably duration of open lesions
6. *Susceptibility and resistance*
   a. Susceptibility is variable.
   b. Immunity does not follow attack.
7. *Additional considerations*
   a. *Incidence* - rare in temperate areas. More common in subtropical or tropical climates; patients are frequently homosexuals.
   b. *Symptoms* - small nodules on sex parts can grow to become ulcerative, then cover, even destroy sex organs.
   c. *Treatment* - tetracycline or erythromycin

SUGGESTED CLASS ACTIVITY

While gonorrhea remains Iowa's major communicable disease problem at the time of writing, an increasing incidence of genital herpes portends a rise in other STD for the state.

Nevertheless, for students who are just beginning to learn about VD, awareness of the existence of other STD is all that is required. Detailed study of these complex, not yet fully understood diseases may diffuse two basic goals of this guide, which aim to teach students that venereal diseases are transmitted by sexual contact and that they are easily curable.

STD should be mentioned in the suggested evaluation on page 36, and again in some of the questions for discussion, especially with students who are familiar with gonorrhea and syphilis. It is for students such as these that Objective D of Concept 2, on page 37 is intended.

Otherwise, for clarity and impact, particularly with beginning students, STD should be mentioned briefly as potential problems.

RESOURCES

Pamphlets:
"Sexually Transmitted Diseases"
"Some Questions & Answers about Herpes"
listed pp. 29-30 "Venereal Disease, A Resource Guide," *'78 ed.*

CONCEPT 2. **Gonorrhea and syphilis are two venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.**

Objective A. **List the symptoms of gonorrhea, or their absence, in the male and in the female.**

RELATED CONTENT

Gonorrhea is the most prevalent of the venereal diseases.

The bacterium causing it is Neisseria gonorrhoeae, or the "gonococcus." It lives in the mucous membrane linings of the body and affects the cervix, the uterus, the fallopian tubes, the urethra, the mouth, throat and rectum.

The gonococcus is fragile and survives very poorly outside the human body in open air or under changed temperature conditions.

IN THE MALE:

The gonococci invade the urethra and through it the reproductive structures. In rare instances, bladder and kidney involvement may also occur.

Symptoms of gonorrhea in the male usually appear 3-9 days after exposure and they are:

1. Yellowish-white discharge from the penis
2. Painful urination

In males the infection most often affects the urethra and the person usually has signs and symptoms.

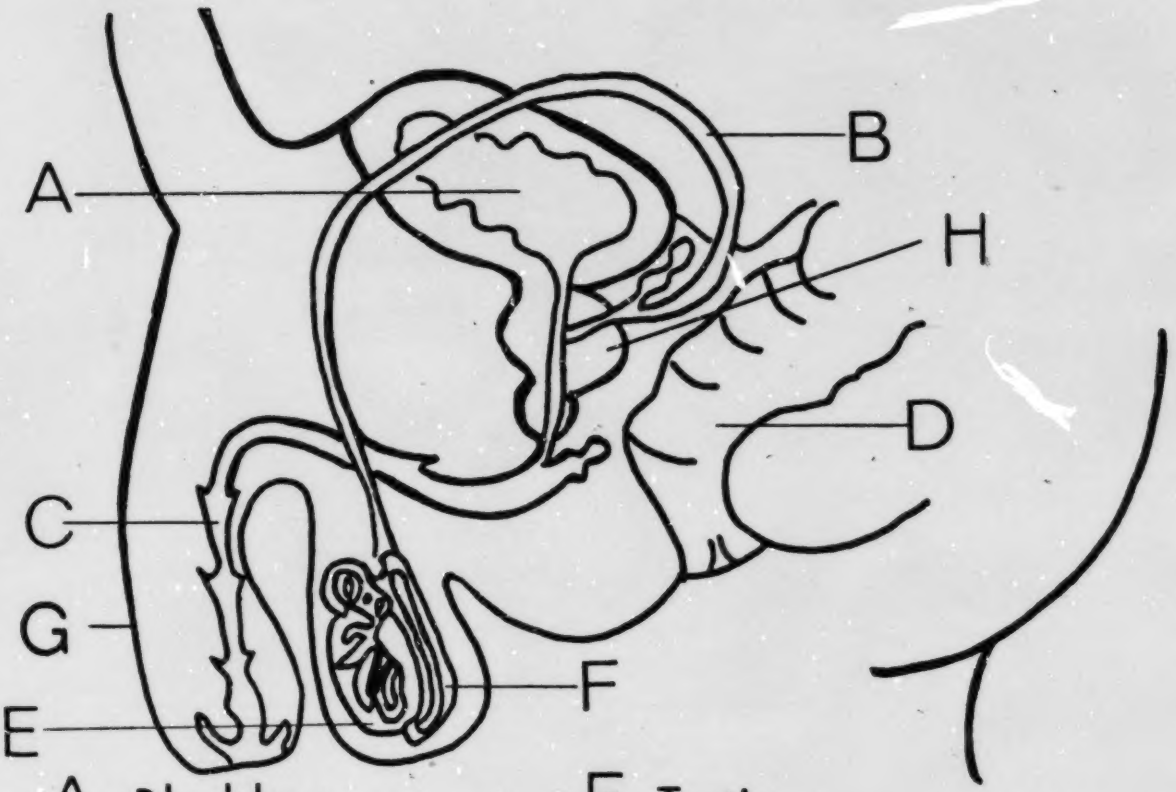
Male reproductive system:

A. Bladder - muscular sac in which urine is retained
B. F. Sperm ducts (consist of epididymis & vas deferens) - a pair of tubes carrying fluid containing sperms
C. Urethra - canal by which urine is discharged from the body In the male the canal also provides for passage of seminal fluid.
D. Rectum - last section of the intestine leading to outside opening
E. Testis - one of a pair of male reproductive glands
G. Penis - organ for discharge of sperm-carrying seminal fluid and for urine
H. Prostate - gland surrounding the neck of the bladder and the beginning of the urethra

RESOURCE

This Guide contains duplicate copies of the Male and Female Reproductive Structures. One set may be cut out for ease in duplication.

MALE GENITO-URINARY TRACT



A. Bladder

B. Vas deferens

C. Urethra

D. Rectum

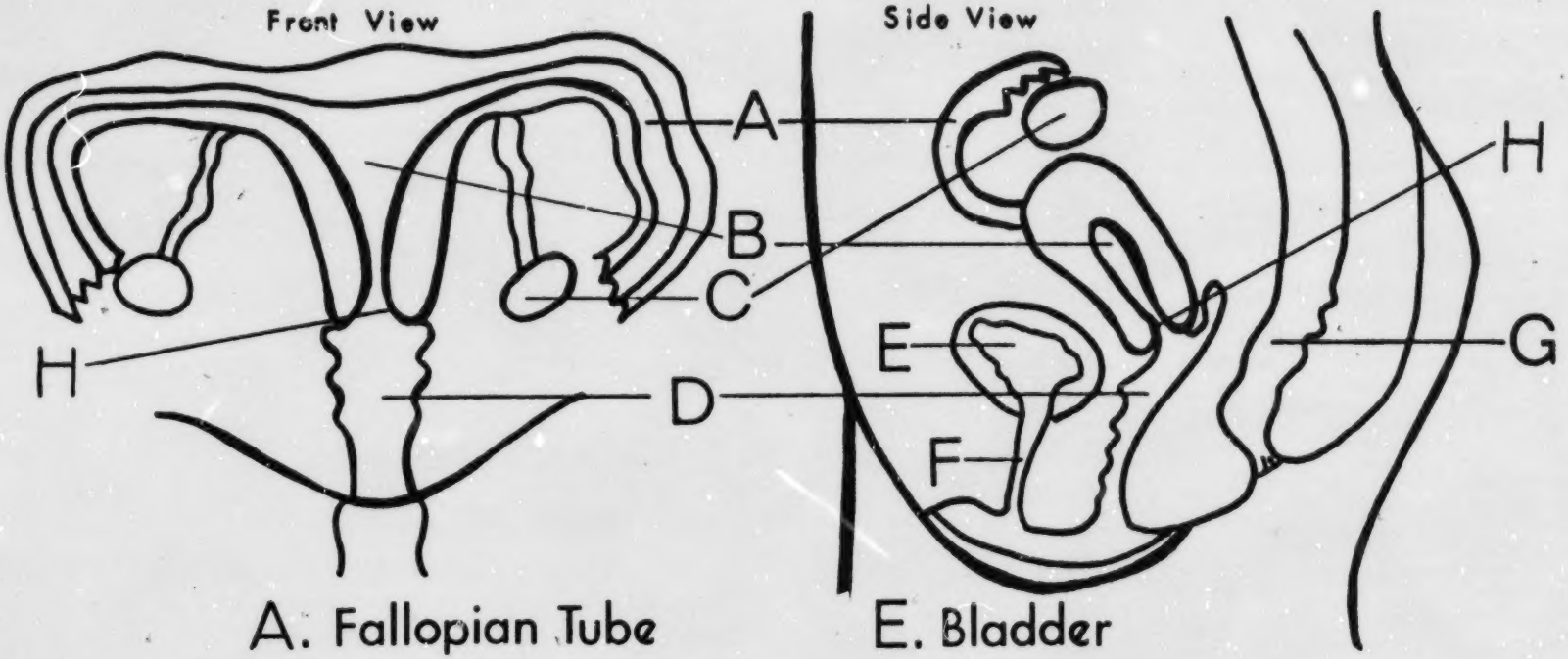
E. Testis

F. Epididymis

G. Penis

H. Prostate

FEMALE PELVIS



A. Fallopian Tube

B. Uterus

C. Ovary

D. Vagina

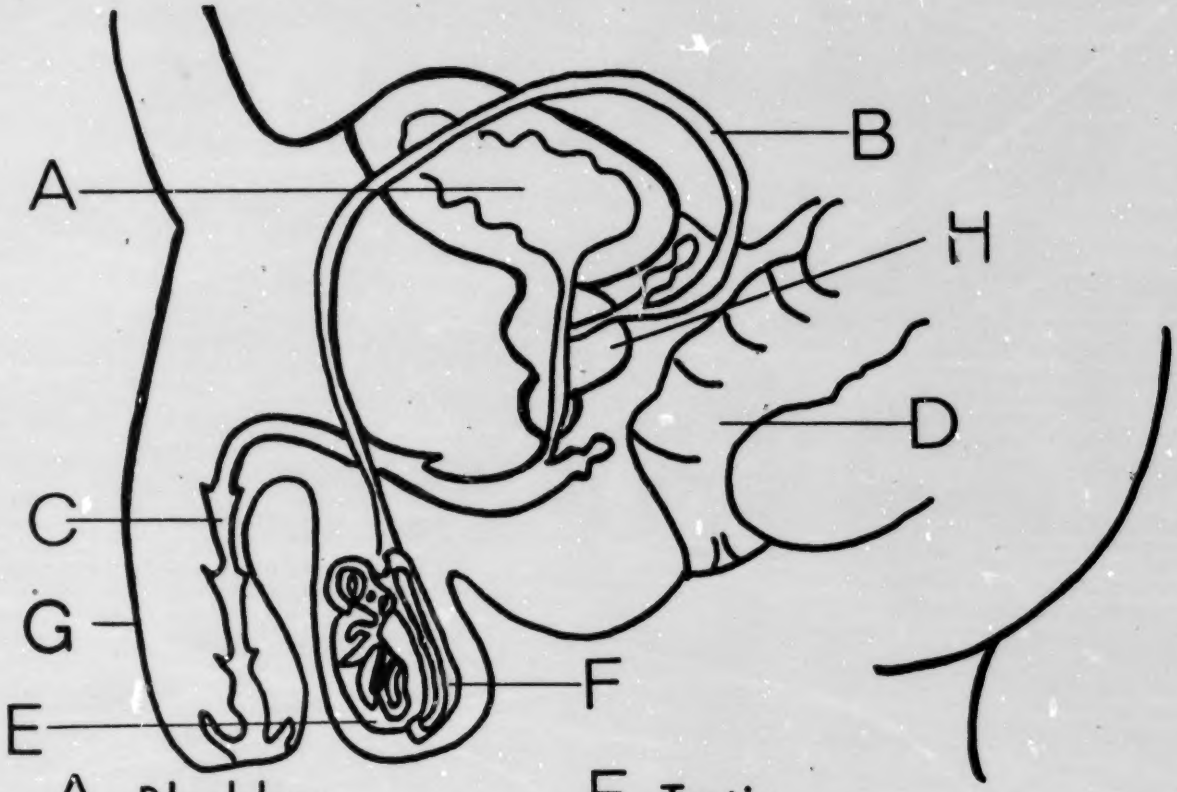
E. Bladder

F. Urethra

G. Rectum

H. Cervix

MALE GENITO-URINARY TRACT



A. Bladder

B. Vas deferens

C. Urethra

D. Rectum

E. Testis

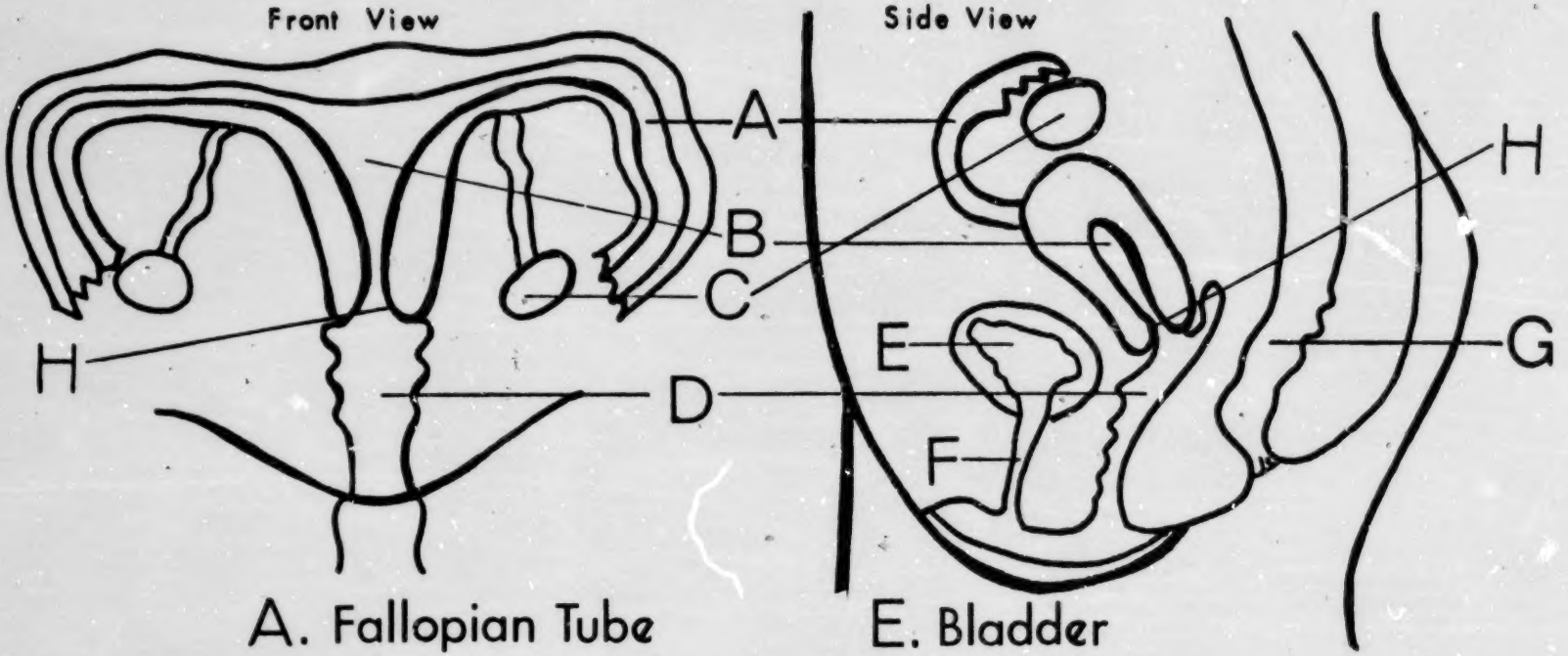
F. Epididymis

G. Penis

H. Prostate

30-A

FEMALE PELVIS



A. Fallopian Tube

B. Uterus

C. Ovary

D. Vagina

E. Bladder

F. Urethra

G. Rectum

H. Cervix

CONCEPT 2. Gonorrhea and syphilis are two venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.

Objective A. (contd.) **List the symptoms of gonorrhea, or their absence, in the male and in the female.**

IN THE FEMALE:

The gonococci usually affect the cervix, the uterus and the fallopian tubes.

Symptoms of gonorrhea in the female will often be present but not noticed or recognized because:

1. Tissues of the cervix are not susceptible to pain.
2. Urinary tract in the female is not connected to the reproductive system as in the male, where it is the urethra which reacts to the infection.
3. Some discharge might be considered normal.

Many females and some males are asymptomatic - have no symptoms.

In the female any of the following may be symptoms:

1. Painful urination
2. Unusual or excessive discharge
3. Abdominal pain
4. Unusual vaginal bleeding

Untreated asymptomatic females may in due course suffer from a painful infection known as gonorrheal pelvic inflammatory disease (PID), also known as gonorrheal salpingitis. (See Objective B p. 32.)

Female reproductive system:

A. Fallopian tubes - a pair of egg ducts
B. Uterus or womb - a pear-shaped organ where fertilized egg grows
C. Ovaries - a pair of egg-producing glands
D. Vagina - birth canal leading from uterus to outside opening
E. Bladder - muscular sac in which urine is retained
F. Urethra - canal by which urine is discharged from body
G. Rectum - terminal section of the intestine
H. Cervix - lower portion of uterus, or opening of the womb

SUGGESTED CLASS ACTIVITY

Prior to this class meeting, a student could arrange to pick up a sealed culture plate or a stained slide at a local laboratory.

Give students an opportunity to see gonococci or a stained slide under a microscope or in photographs. Explain or demonstrate how cultures are made.

Discuss the significance, in terms of controlling the disease, of most males' feeling pain, and conversely, of most females' being unaware of their infection.

Distribute health department pamphlet, "Venereal Disease the Problem, and What You Can Do About It" to each student.

CONCEPT 2. Gonorrhea and syphilis are two venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.

Objective B. **Describe the complications caused by untreated gonorrhea in the male and in the female.**

RELATED CONTENT

Untreated gonorrhea in the male can result in:

1. Scar tissue which could block the urethra making urination painful or impossible;
2. Scar tissue blocking the sperm ducts and leading to sterility;
3. Painful forms of arthritis, meningitis or heart disease.

Untreated gonorrhea in the female can lead to:

1. Blocking of the fallopian tubes by scar tissue leading to sterility;
2. Tubal pregnancy;
3. Gonorrheal pelvic inflammatory disease (PID), also known as salpingitis; this is the most common complication, is very painful, may require hospitalization, and frequently leads to sterility.

If a pregnant woman has gonorrhea at the time she delivers her child, the gonococci could infect the child's eyes and blindness could result.

Iowa law requires that preventive drops of silver nitrate be placed in the eyes of *every* newborn child.

SUGGESTED EVALUATION

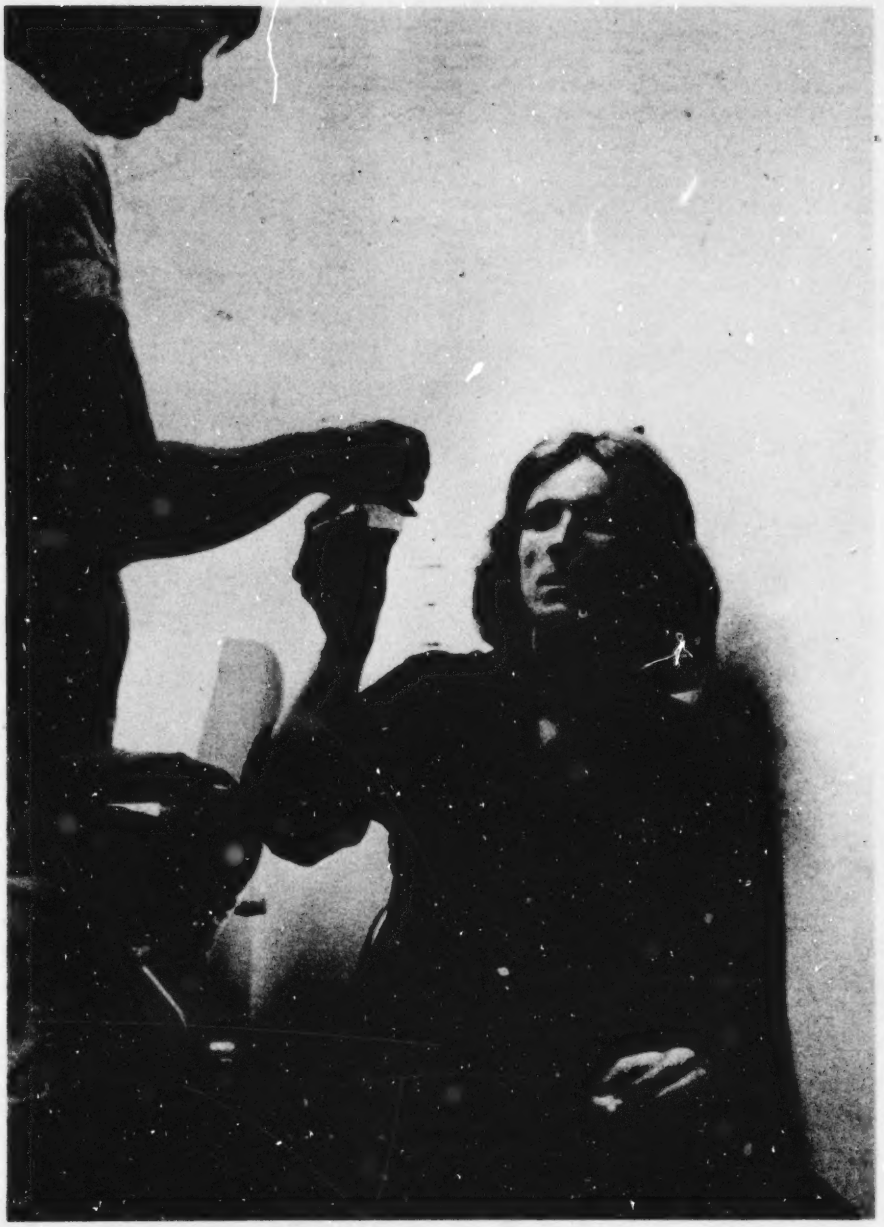
Present each student with the following hypothetical case study information (can be presented orally or in written form):

On Friday evening, February 14, Bill's parents left town for the weekend, and Bill's date spent the evening at his house. Through sexual intercourse, Bill became infected with gonorrhea.

Ask the students to respond to the following questions:

- What do you think may happen to Bill during the next three weeks if he does not receive treatment? Describe possible physical, mental and social effects.
- How might this affect some other people in Bill's life?
- What might happen to Bill during the next few years? Name possible physical, mental, moral and social effects.
- How might this affect Bill's date, his parents, his community?

Information offered by the students in response to these questions should be accurate and should include at least one physical (e.g., pain, discharge), mental (e.g., stress, fear, guilt) and social (e.g., concern for sex contact[s], attitude of family) symptom for each time period mentioned. Students may present this information orally or in written form.



CONCEPT 2. Gonorrhea and syphilis are two venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.

Objective C. **Outline the progressive symptoms and complications caused by untreated syphilis infection.**

RELATED CONTENT

In syphilis, the infectious bacteria known as Treponema pallidum, also called spirochetes (spiro-keets), get into the circulatory system (both the blood stream and the lymphatic system) through a microscopic break in the skin or through the mucous membrane linings of the body.

Like gonorrhea, syphilis is transmitted through intimate sexual contact with a person infected with the disease, usually sexual intercourse. Syphilis manifests itself in different ways at different stages in the infected individual.

1. After an incubation period averaging 3-4 weeks, an open and often painless sore, called a chancre (shan-ker), appears at the point where the organism entered the body. Usually it is on the genitals, sometimes the mouth. It is sometimes hidden, especially in females. It is highly infectious, teeming with spirochetes.

This is called the first, or "primary," stage.

2. Two to six months after infection, a rash on the whole body, or small parts of it, such as the palms of the hands and soles of the feet, may appear. It is highly infectious. The hair may fall out in patches and the body may ache. Fever, sore throat, general discomfort and tiredness sometimes occur.

This is called the second or "secondary" stage.

Pregnancy during untreated primary or secondary syphilis may end in stillbirth.

Symptoms of both stages disappear, even without treatment. But the germs, infection and infectiousness continue unless medical treatment is given. A person is infectious to sex partners when symptoms are present; secondary symptoms can recur for as long as two years and not be noticed; hence, infectiousness could possibly continue for as long as two years.

3. All syphilis is "latent" at some time during its course. There are no sores during latency, and the patient is not infectious at this stage.

This is the hidden or "latent" stage.

4. Long range effects of untreated syphilis are: destructive lesions damaging the heart, large blood vessels and central nervous system, and leading to abnormal gait, blindness, crippling, insanity and even death in about 23% of cases. The destructive stages sometimes only manifest themselves 5 to 15 years after infection.

This is the destructive "late" stage.

5. A mother who has syphilis at any stage can pass it on to her unborn child. Adequate treatment of the mother before the 18th week of pregnancy prevents the infection from reaching the baby. Later treatment cures both the mother and child, but whatever damage has occurred before treatment cannot be undone.

A child born of an untreated infected mother in the latent or late stages of syphilis will suffer from a variety of symptoms of congenital syphilis.

SUGGESTED CLASS ACTIVITY

Have students chart on a time scale the time lapse between exposure and period of communicability, i.e., incubation period, and compare with that of gonorrhea.

Alongside physical symptoms of gonorrhea and syphilis, have students discuss the mental and social costs of venereal diseases:

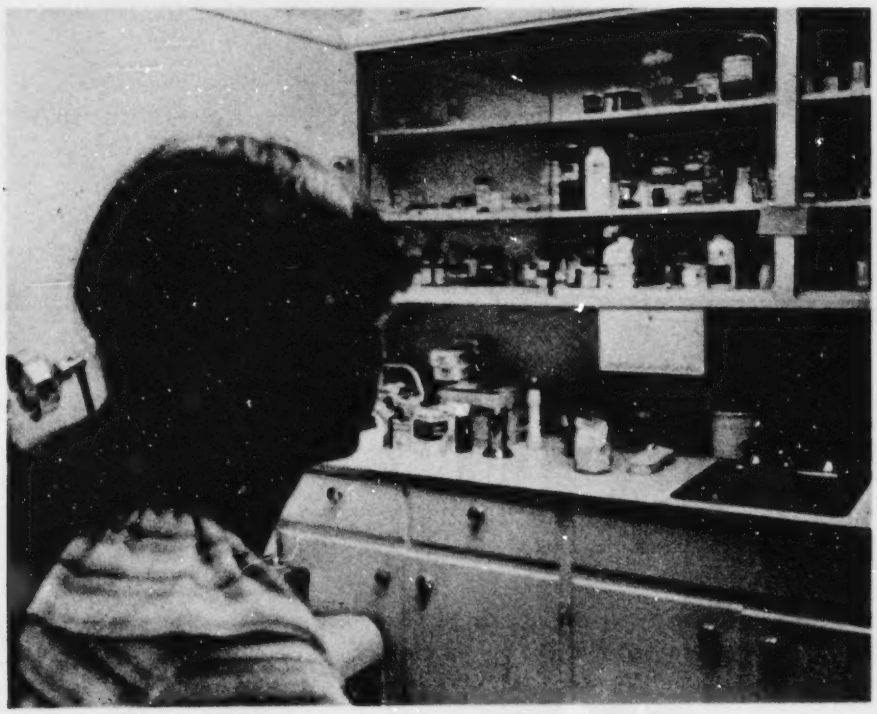
Mental - stress, guilt, fear, distrust, anxiety, etc.

Social - concern for sex contact(s), attitude of family & friends, problems resulting from absence from work, school, etc. Cost of custodial care for victims of syphilis; i.e., insanity, loss to society, shortened life span.

Project for interested students would be a historical survey of the famous and great who suffered from venereal diseases.

RESOURCES

Venereal Disease, A Resource Guide, Appendix, p. 75 *1978 ed.*, "Partial Economic Costs of VD." Appendix - "Venereal Disease and the Great" from British Journal of Venereal Disease.



CONCEPT 2. Gonorrhea and syphilis are two venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.

Objective C. (contd.) **Outline the progressive symptoms and complications caused by untreated syphilis infection.**

SUGGESTED EVALUATION

Ask students: Could someone who suspects infection with gonorrhea or syphilis diagnose him or herself?

(Replies should indicate the inadvisability of self-diagnosis because of the variability of symptoms; the dangerously high percentage of asymptomatic cases; lack of laboratory equipment and know-how necessary for definitive diagnosis. Vaginitis and NGU cause symptoms similar to those of gonorrhea and may be present with or without gonorrhea.)

Have students respond to the following:

If an individual suspected gonorrhea infection, could he/she save embarrassment by going to the doctor and asking for a "thorough physical examination"?

Reply, either written or oral, should show understanding that symptoms of gonorrhea are often vague, generalized or non-existent; a certain type of smear or culture must be made to diagnose it; and that gonorrhea and STD are not routinely looked for by all physicians unless specifically requested. Emphasize that physicians consider information about a patient as private and confidential.

CONCEPT 2. Gonorrhea and syphilis are two separate venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.

Objective D. **List the most significant STD according to symptoms.**

SUGGESTED CLASS ACTIVITY

This objective is designed for students who are already well informed about gonorrhea and syphilis.

If key symptoms of the STD are classified as:

1) genital ulcers or sores
2) genital discharge
3) body or genital rashes

ask students to classify the STD according to these symptoms. Consequently, students should be able to list the most significant sexually transmitted disease and one additional STD which generally produces each of the above symptoms.

Thoughtful students may wonder why all STD are not reportable. Some factors to consider in weighing a decision to make diseases reportable:

- Are the numbers and seriousness of the disease significant?
- Are criteria for diagnosis clearly understood?
- Is treatment available to cure the disease and to interrupt its transmission?
- Are resources, such as commitment and money available?

SUGGESTED EVALUATION

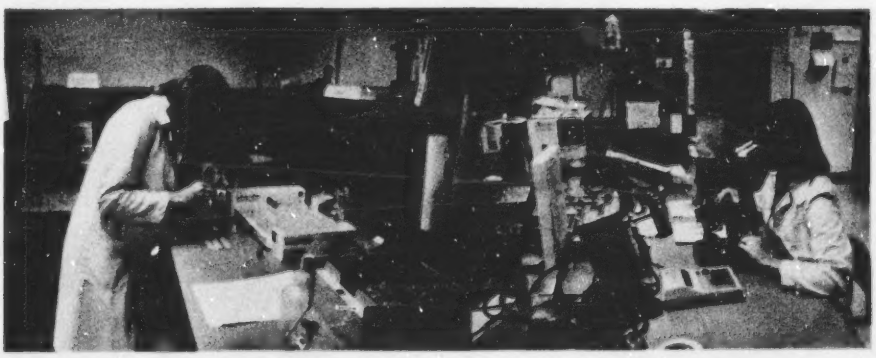
Ask students to classify syphilis and gonorrhea according to key symptoms using the same format as above.

Students' summaries should indicate the following:

- One symptom is not a reliable indication of the presence or absence of disease.
- Symptoms in males may differ from those in females.
- Symptoms may differ among individuals.
- Symptoms at different stages of a disease may differ.
- Absence of symptoms cannot be taken as indication of freedom from disease.

RESOURCES

Listing of the STD in this publication, pp. 20-27, "VD Handbook" and pamphlets listed pp. 29, 30 "Venereal Disease, A Resource Guide."



CONCEPT 2. Gonorrhea and syphilis are two separate venereal diseases with different symptoms and effects. Most other STD produce symptoms that are similar to those of either syphilis or gonorrhea.

Objective E. **Inquire into myths about venereal diseases.**

RELATED CONTENT

Myths:

1. You can get VD from toilet seats, door knobs, soiled towels.
2. You can get gonorrhea and syphilis only once.
3. Gonorrhea is caused by straining yourself, as in lifting a heavy object.
4. You can tell by looking at a person whether or not he or she has VD.
5. Syphilis is hereditary.
6. A quick cure for venereal diseases can be purchased without prescription.
7. Gonorrhea and syphilis are punishment for promiscuous sexual behavior.
8. You can get syphilis from sheep.
9. Birth control pills prevent venereal diseases.
10. You will always know when you have a venereal disease.
11. Venereal diseases infect only lower socioeconomic groups.
12. Venereal diseases, gonorrhea, syphilis, are all names for the same disease.
13. Venereal diseases cannot be passed by homosexual acts.
14. Only the kind of people who don't bathe regularly, forget to brush their teeth, and smoke are likely to get venereal diseases.

SUGGESTED CLASS ACTIVITY

Use the 14 myths listed above as a pre-test, where even one YES answer shows the need for further education.

Clarify these myths; elicit from the class how the myths may have arisen, and why people believe them.

Have students discuss how the myths interfere with the prevention and control of venereal diseases.

SUGGESTED EVALUATION

Have students respond to notion: "VD is punishment for promiscuous sexual behavior." Answer should show some awareness of past and persisting attitudes, but should deal with venereal diseases on a factual basis, as a scientific problem.

Is there any way you can get V.D. without having sex with an infected person?

Can you get pregnant and get V.D. at the same time?

What does masterbate mean?

How can a woman know she has V.D if the guy doesnt tell her & there arent any symtoms?

Why does it happen to teenagers get it more than adults

CONCEPT 3. **Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.**

Objective A. **Identify tests for the detection of gonorrhea and syphilis.**

RELATED CONTENT

Gonorrhea

Specimens from the patient's urethra, cervix, rectum, throat or other possible infected sites are tested in the laboratory by:

A. Smear - a slide with a specimen smeared on it which is examined under the microscope for the presence of gonococci

B. Culture - a plate containing a nutrient culture medium streaked with a specimen, which is incubated at body temperature for about 48 hours. The growth of gonococci colonies makes the test positive.

Syphilis

A laboratory test is performed on specimens of the patient's blood serum (the liquid which separates from blood cells).

This procedure does not test for the spirochete, but for evidence of its presence. Antibodies, which the body has manufactured to combat the spirochete infection, are transported by the bloodstream and cause a positive reaction on the test.

Usually the blood test will not be positive until the chancre (the first sore) has been present for one or two weeks. Blood tests taken before or just after the appearance of the chancre will show the patient to be "non-reactive" or normal. The time span between infection and a reactive blood test may sometimes be as long as 3 months (like the incubation period).

In instances where the patient comes in with a chancre, the doctor can actually see the spirochetes under a special microscope when examining serum from the sore.

SUGGESTED CLASS ACTIVITY

A field trip to a laboratory and explanation of smear and culture techniques would be ideal, but is not essential.

Class discussion: What is the significance of the large number of infected persons who are asymptomatic? Will their laboratory tests be positive? (If they are infected with gonorrhea, yes. If they are infected with syphilis in the incubation stage, then the test would be negative.)

Class discussion: Would a blood test show gonorrhea infection? (No. There is no reliable blood test for gonorrhea.)

Have the class discuss: Once a person has been infected and cured, how long will he/she remain immune to syphilis or to gonorrhea? (Not at all. There is no immunity — infection is possible time after time.)

CONCEPT 3. Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.

Objective A. (contd.) **Identify tests for the detection of gonorrhea and syphilis.**

SUGGESTED CLASS ACTIVITY (contd.)

Discuss:

What would be the significance of a blood test for gonorrhea? And of a vaccine for syphilis and gonorrhea? (Although research on both these problems is under way, the solution to neither has been found.)

In a class with scientific interests, a lecture-discussion about immunology as it relates to syphilis serology would be appropriate.

Why is there no immunity to gonorrhea — or syphilis, or any of the STD — even after repeated infections of the same person?

This is a difficult question to which the answer is not known. Some partial reasons why this is so are listed below:

1. Gonorrhea often tends to be a surface infection of mucous membranes; the gonococci hence remain on the surface of the mucous membrane, and the antigen (gonococci) may never reach the cells producing the antibody.
2. Antibodies produced in the cells may never reach the surface infection of gonococci.
3. Antigens present in one strain of gonococcus may be different from those of a second strain.
4. Antibodies for one strain of gonococcus may not be exactly right for the antigens in the next strain.
5. People vary in their resistance.

RESOURCE

Glossary of terms pp. 65, 66.

CONCEPT 3. Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.

Objective B. **Describe treatments for gonorrhea and syphilis.**

RELATED CONTENT

Gonorrhea:

Preferred treatment consists of the injection of a specific type of penicillin, administered during a single visit. Alternative therapies are available for patients who are allergic to penicillin.

Sexual contacts of gonorrhea patients should receive the same treatment as if they were known to have gonorrhea as insurance against developing the disease.

Follow-up cultures should be made 3 to 5 days after completion of treatment to check on possible gonococcal resistance to the antibiotic and for possible re-infection. Inadequate dosage when treating gonorrhea promotes resistance of the gonococcus organism.

Other antibiotics are available, though very much more expensive, against penicillin-resistant gonorrhea, which has recently emerged. This constitutes a warning of the possibility of newer strains yet, which might be completely resistant to our drugs. The implication is, therefore, to treat all gonorrhea infections without delay and with adequate amounts of antibiotics and always perform a test of cure (i.e., a test to make sure the treatment worked).

Syphilis:

Syphilis can be treated by a doctor at any stage of the disease (primary, secondary, latent, congenital) and a number of antibiotics can achieve a cure.

For early syphilis, a single massive dose of a certain kind of penicillin is the preferred treatment, but other antibiotics are available for those allergic to penicillin.

Follow-up serological tests should be made for several months, sometimes for a year or longer after treatment. This is because serological tests for syphilis revert very slowly back to negative or to their ultimate low level of reactivity (serofast); i.e., the antibodies remain in the blood for a long time.

To insure that treatment was effective, or to identify a reinfection that may occur years later, it is important to establish the lowest level of reactivity. For this reason, follow-up blood tests may be required for as long as a year or more after initial treatment.

Early syphilis can be cured without residual damage. Late syphilis can be treated, but whatever damage has occurred before treatment cannot be undone. The earlier in the pregnancy a syphilitic mother is treated, the less chance there will be of congenital syphilis.

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CONCEPT 3. Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.

Objective B. (contd.) **Describe treatments for gonorrhea and syphilis.**

SUGGESTED CLASS ACTIVITY

Discuss the importance of speed in obtaining treatment after exposure.

Have students discuss: Until 1974 minors under 16 years of age needed parental consent to obtain treatment for venereal diseases. How do you think the change in the law affects the number of young people volunteering for treatment?

Have students compare and contrast the incubation period for gonorrhea with that of syphilis, as it relates to the rate of spread of the diseases.

Incubation period:

Gonorrhea	3 days - 9 days
Syphilis	10 days - 90 days

Have students discuss: A person has been exposed to syphilis, but a blood test taken three weeks after exposure is found to be "non-reactive." Is he/she infectious?

Explain the difference between "infectious" and "infected" if need be. (If the person is infected with syphilis, then infectiousness depends on whether or not the chancre is present.)

During latent stages of syphilis infection, is a person infectious? (No, with the exception of a pregnant female; who may infect her baby causing congenital syphilis.)

Does the person have sores? (No) Is the person's blood test reactive? (Yes)

Have students discuss:

Should a person treat him or herself? (Never)
Are the drugs used for treating VD available without prescription? (No)
Is a prescription always necessary? (Yes)
Are there different types of penicillin? (Yes)

SPECIAL PROJECT for interested students: Historical survey of venereal disease treatment.

RESOURCE "Venereal Disease, A Resource Guide," pp. 16-20.

CONCEPT 3. Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.

Objective C. **List methods of preventing venereal diseases.**

RELATED CONTENT

1. The only sure preventive is abstinence - no sexual contact with others.
2. Limiting sexual contact to one person, who is uninfected with VD and who reciprocates the fidelity, insures zero risk of infection.
3. A prophylactic (condom) used by males during all contact protects the female as well as the male from infection.
4. Prompt washing with soap and water and urinating immediately after contact help reduce risk of infection in males.
5. Routine VD check-ups by the sexually active, particularly women, help detect any infection early.
6. Visual inspection of one's own sex parts in good light to detect any sores or discharge is a preventive precaution.
7. Contraceptive foams, jellies and other vaginal preparations when used regularly before contact and according to instructions may help reduce the risk of infection for females.

NOTE: The disease-bearing organisms are fragile until entrenched in the body; hence, preventive measures should be carried out promptly and thoroughly each time. It is important that in case of infection, or suspected infection, *both*, or *all* sex partners are treated promptly to help prevent reinfection.

SUGGESTED CLASS ACTIVITY

Have students participate in a discussion concerning methods useful in preventing gonorrhea and syphilis.

Discuss: The more selective one is in his or her sexual contacts, the more likely one will remain free of venereal diseases.

Involve students in discussing:

1. How are values involved in making decisions about ways of preventing venereal diseases?
2. What are forces that influence our values?
3. Should sexually active males and females carry prophylactics?
4. Suppose a vaccine for gonorrhea were discovered. To be effective in eliminating the disease, who would have to be immunized? How would you go about locating sexually active people?
5. If one person suspects a VD infection, why should both — or all — sex partners be examined by a physician or a clinic? (Various screening studies have found that the people with the highest rate of gonorrhea are those who have been treated within the previous three weeks.)
6. Records kept in some VD clinics show that as many as 20 to 25 percent of the patients treated for VD are ones who have been treated and cured previously. What are some of the factors — previously discussed or not — which you think bring this about?

SUGGESTED EVALUATION

Read the students a story such as "About Values," below. By role playing, large or small group discussion, or individual written assignment, have students complete the following:

ABOUT VALUES —

I know my folks have taught me the value of a dollar. But values to do with sex — those are hard to talk about.

I go to church enough to know that I'm expected to be a virgin until I marry. But TV, kids at school, movies, and even some of the jokes and hints at my house when there's company tell me that isn't always the way it works out.

Anyway, last spring, just after my 16th birthday, I met this neat guy at a wedding. Jerry. He's from Des Moines.

And he's been driving back every weekend since, just to see me, or to take me out.

Now he says I might have gonorrhea. Me!

It's easy for Jerry to go to a clinic where no one knows him. How can I go to the doctor — it's a 50 mile drive there and back, and his nurse is my Mom's second cousin! And what do I say at school?

Oh, I'll find a ride to the doctor's — and cousin Edna will get me a note for school.

What really hurts is that I see now that Jerry doesn't love me.

I wish I'd understood in the first place that Jerry didn't want my love — all he wanted was sex — and not only from me.

As a result of her experience, do you think the narrator will or will not:

1. get treatment?
2. terminate the relationship with Jerry?
3. make a decision about her future health behavior?

CONCEPT 3. Gonorrhea and syphilis are diseases of youth that can be detected, treated and prevented.

Objective D. **List all the venereal disease treatment centers available to your community.**

SUGGESTED CLASS ACTIVITY

As a class project, assign students to find out all relevant information about physicians, VD clinics, county health departments or other treatment centers within reach of your community.

Students should decide how best to note and publicize this information, showing address, hours open, directions, telephone numbers, etc. See p. 54, Discussion Topic III, for ideas.

Students should delegate one person to contact the Iowa State Department of Health, Venereal Disease Control (515) 281-3031 (call collect). And ask for ideas on how best to locate treatment facilities in any location.

RESOURCES

"Venereal Disease, A Resource Guide," Appendix "New Ways to Combat VD."

"Venereal Disease, A Resource Guide," pp. 12-14 for listing of VD treatment centers in Iowa.

Lead-in to Discussion Topics

The following section of this Teachers' Guide assumes that the three preceding concepts have been presented to the students and presumably absorbed by them; and that whether the stated objectives have been fully met or not, the students at this time have enough specific information and background about venereal diseases to consider the four Discussion Topics.

Teachers will develop their own way of dealing with the Discussion Topics. One suggestion is to begin by considering the topic with the class as a whole. The teacher writes appropriate headings on the blackboard. For example, for DISCUSSION TOPIC I, these might be:

> venereal diseases & individual responsibility; social responsibility in venereal disease control. Students suggest relevant items; e.g., condoms; free venereal disease tests & treatment, etc. The teacher lists them under the appropriate heading, and class discussion ensues.

For dealing with "Questions to Consider," divide the class into groups, each with a facilitator and a recorder. The facilitator will see that the group stays on the selected topic for the time alloted; the recorder will give a report on the group's discussion.

You may decide to have separate groups deal with just one question for the next 10 minutes, and then have class discussion of the reports; or you may ask each group to tackle more than one, or even all of the questions, in 5 to 6 minutes each, so that all groups will be familiar with each problem situation in the ensuing class discussion.

Ask students to pretend they are the concerned individual in each situation described, and then determine how they would handle it.

DISCUSSION TOPIC I.

The individual and the community share responsibility in the control of venereal diseases.

SUGGESTED CLASS ACTIVITY

QUESTIONS TO CONSIDER:

1. What if venereal diseases were spread by a bee sting? Would that change your attitude toward infection? If so, why?

(Discussion should elicit reference to: Individual and community response to venereal diseases under the hypothetical circumstances, and lead to the complexity of dealing with a sex-related issue.)

2. Honestly, what are your chief concerns, if you were to catch a venereal disease? Are they: concern for your health? parents' reaction if they found out? peers' attitude should they find out? infection of sexual partners?

(Concern with parents' and peers' reactions as well as possible feelings of embarrassment are understandable and should be aired; but in due course the group report to the class as a whole might be reviewed in light of the class's recently acquired information about health effects of venereal diseases, about their transmission and their epidemic status.)

Then students should be encouraged to define:

- what constitutes taking responsibility for one's health
- how one can act reponsibly toward sex partners
- how one can act responsibly toward society.

3. If you are a guy, would you use a prophylactic? Under what circumstances and if not, why not? How would you respond to a girl's asking you to use one? Would you use other preventive measures? If so, why?

(Discussion might center on an individual's taking responsibility for his/her own health, as well as acting responsibly toward sex partners. The idea of a condom as a health measure [in addition to a contraceptive] is new to many young people. Used according to directions it protects both partners against some STD in addition to venereal diseases.)

4. You are a high school student and suddenly find you have gonorrhea. You go to the doctor for tests and treatment and are shocked at the bill. It takes a big chunk out of your after-school earnings and you are saving up for college next year. You have promised to bring your contacts to the doctor, but you know that will add up to a lot of money. What do you do now?

(While laboratory tests and drugs for treatment are provided free of charge by the state health department, many physicians do not avail themselves of this service. Hence the cost of tests and treatment can vary widely.

Some communities provide free clinics; this is not so in all parts of the state at all times, but depends on the availability of funds. Encourage students to find out conditions in their community.)

DISCUSSION TOPIC II.

How significant are Iowa laws relating to venereal disease prevention and control?

RELATED CONTENT

Age of consent:

1. Minors seeking diagnosis and treatment for venereal diseases may give their own consent to the provision of medical care (Code of Iowa, Chapter 140.)

Other legal aspects of venereal disease control:

1. A doctor attending the birth of a child is required to administer a prophylactic solution approved by the health department into the eyes of the newly born infant (Code of Iowa, Chapter 140.)
2. Premarital blood test for syphilis is required in Iowa 20 days prior to applying for a license (Code of Iowa, Chapter 596).
3. A physician caring for a patient during pregnancy is required to perform a prenatal blood test for syphilis (Code of Iowa, Chapter 140).
4. Venereal diseases and current crucial health issues are to be taught in schools; first in grades seven and eight, and again in grades nine through twelve (1977 Code of Iowa, Section 257.25).
5. Condoms may be advertised and sold openly over the counter and in vending machines (1977 Code of Iowa, Section 135.11, Subsection 16).
6. Doctors, clinics and laboratories are required to report all cases of five venereal diseases they are treating, or know of, to the Iowa State Department of Health (Code of Iowa, Ch. 140).
7. The local board of health is required to examine each person reasonably suspected of having a venereal disease on the basis of epidemiological investigation, unless that person is already being treated for that condition (Code of Iowa, Ch. 140).
8. Reports to the Iowa State Department of Health about persons infected with venereal diseases will be secret and confidential to the extent necessary to prevent identification of persons named in them; other parts of these reports, information and records will be public records (Code of Iowa, Ch. 140).

In addition to the preceding and independently of Iowa law, syphilis blood tests are administered to recruits of the armed forces.

DISCUSSION TOPIC II. (contd.)

How significant are Iowa laws relating to venereal disease prevention and control?

Limitations of VD laws in controlling venereal diseases:

1. Some laws are not enforced to the fullest degree (e.g., not all doctors report each case).
2. Some laws are difficult to enforce; some are ignored.
3. Some laws are ineffective (e.g., law concerning syphilis examination prior to obtaining marriage license assumes that there will be no sexual relations outside of marriage).

NOTE: The reportable venereal diseases are: syphilis, gonorrhea, chancroid, lymphogranuloma venereum (LGV) and granuloma inguinale (GI).

The other STD are not reportable in Iowa or in the U.S. (See p. 37 for analysis.)

SUGGESTED CLASS ACTIVITY

Have the class divide into discussion groups, so that each group discusses one of these laws and decides what its intent might be and whether or not it fulfills an important part in the campaign against venereal diseases.

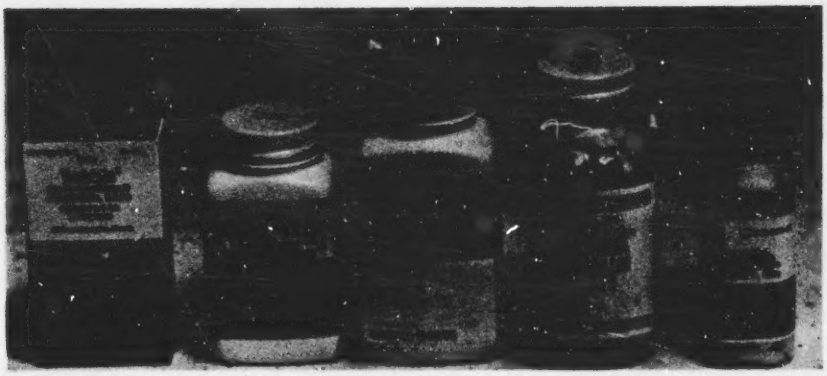
QUESTIONS TO CONSIDER:

1. If you discovered that you have a venereal disease and may have spread it to other persons, how would you handle it? Would you:
   a. give their names to the doctor or public health representtative; does the law require it?
   b. contact them yourself; or
   c. do nothing?

   Under what conditions would you do each, and why?

   (Discussion might elicit the logic of doing either a. or b. for the sake of public health and for reasons of self-interest, since you might be re-infected.)
2. Discuss confidentiality. What are your concerns regarding venereal disease reports and how they are handled? What are the pros and cons of being treated by the health department (or hospital clinic in your area) vs. being treated by your doctor?
3. Your doctor has just informed you that you have gonorrhea. The doctor is your father's old buddy and has told you he is going to call your father. Is there any need to tell your father? How do you know no one in town will see your name on the lab. test?

   (According to law, minors are entitled to VD tests and treatment without parental consent; however, there is no law to prevent the doctor from calling his friend. Laboratory tests are confidential by law.)



4. You are a parent. Your 16-year-old son has just informed you he has the "drips." What should you say to your son? What about the boy's contacts?

(Parental reaction is fairly certain to be mixed, with expressions of blame and self-reproach alternating, but immediate treatment will be a top priority. The existence of a relationship between parent and son which could be trusted in a crisis would prove reassuring to both.

Discussion might deal with:

- parents' responsibilities
- parents' frequent reticence about discussing VD
- what students would regard as ideal parent attitudes)

5. O.K., so you're a male chauvinist. You think of yourself as a daredevil — you like fast cars, girls, sex — you know all about the risks, but it's your body, your life, isn't it? You have a right to do what you want with it!

(Discussion should deal with others involved in your life; the other drivers on the highway, your sex partners, society which subsidizes your education, health care, highway safety, etc.)

6. You call yourself a liberated woman. By that you mean that you have control over your life. If you have sexual intercourse, why should you depend on the man to provide a condom? Would it be wise to carry one with you and know how it's used?

(Discuss a woman's right to protect herself. If students consider the action unconventional, the role of and changes in convention might be elicited. The possibility of infection for those who are sexually active is a fact of life. To take action to protect oneself is to be realistic and should be regarded by a sex partner, not as a personal snub, but rather as sensible health behavior protecting both partners.)

DISCUSSION TOPIC III.

How significant is a) education b) case-detection in the control and prevention of venereal diseases?

RELATED CONTENT

The purpose of the Venereal Disease Control Section of the Iowa State Department of Health and of city and county health departments is the control and prevention of disease. They pursue this end by four methods:

1. Education about symptoms and consequences, leading to more openness and elimination of myths
2. Aid in diagnosis and treatment, by providing drugs and by making available free laboratory tests for gonorrhea
3. Follow-up on all laboratory tests suggestive of either syphilis or gonorrhea
4. Interviewing and contact tracing: infected persons are discreetly interviewed for their sexual contacts during the period when the disease could have been passed. Contacts are confidentially located and referred for medical evaluation. In connection with confidentiality, it should be noted that during the referral the infected person giving the names of sexual contacts is not identified. People are located and told: "You have come in contact with a communicable disease, and need to see a doctor."

(For rationale of contact tracing, refer to p. 13)

SUGGESTED CLASS ACTIVITY

Read to the class or hand out copies of Reader's Digest story "VD the Vicious Chain," which is reproduced in the appendix of this publication. Have students discuss the principle of notifying sex contacts, and of contact tracing, from the point of view of effectiveness in disease control, or morality, possible embarrassment, etc.

Discuss the kind of person a health representative would ideally be to make the program effective.

Tim Lindman is the real name of a real public health representative, who today has graying hair and is in his early forties. He is still working in venereal disease control. You may find it of interest to compare the scope of the syphilis problem nationally in 1963 (when the article was written) with today; and with the size of the gonorrhea problem.*

Have students define "epidemiology" and "case-finding."

***RESOURCE**

"Venereal Disease, A Resource Guide," Appendix, p. 81 *1978 ed.*

QUESTIONS TO CONSIDER:

(For students who have had previous instruction about VD, a teacher may substitute "STD" for "VD" in questions 1. and 2.)

1. You are the principal of a large high school. You have been informed that over 30% of students enrolled have had some form of VD. Should you set up some type of education program? Would you inform any of the parents, either individually or as a group? Would you make some recommendations about the students' future actions? If so, what would be appropriate?

(Discussion might deal with what form an educational program should take to be effective; a film; more effective teachers; pamphlets listing symptoms and clinics; or a combination of these.

Recommendations for student action would probably take the form of screening tests, treatment and a drive to enlist students' aid in locating contacts.)

DISCUSSION TOPIC III. (contd.)

How significant is a) education b) case-detection in the control and prevention of venereal diseases?

QUESTIONS TO CONSIDER (contd.)

2. You are a high school student who wants to know something about venereal diseases because of suspected symptoms. There is no VD education program in your school, and your parents would be horrified if you mentioned the word. Whom should you call for factual information?

(Venereal Disease Control, Iowa State Department of Health (515) 281-3031 [call collect]).

3. You are a person contacted by a health representative. She says you have been exposed to gonorrhea. What is your initial reaction? Later — the doctor finds you are infected. How do you feel about helping others involved in your infection?

(Discussion may be wide ranging and include reference to disbelief, surprise, embarrassment, etc., but responsibility for one's health and for controlling the spread of the disease are essential issues.)

4. How would you go about providing venereal disease information to other students at your school? Would you use educational materials? If so, what kind would appeal, and where and how would you use them? Would you have an educational program? What kind, and how would you conduct it? Make specific recommendations.

Follow up student initiative for a class project by conducting a school venereal diseases awareness campaign. This may help students develop a greater understanding of the venereal disease problem, as well as reaching others.

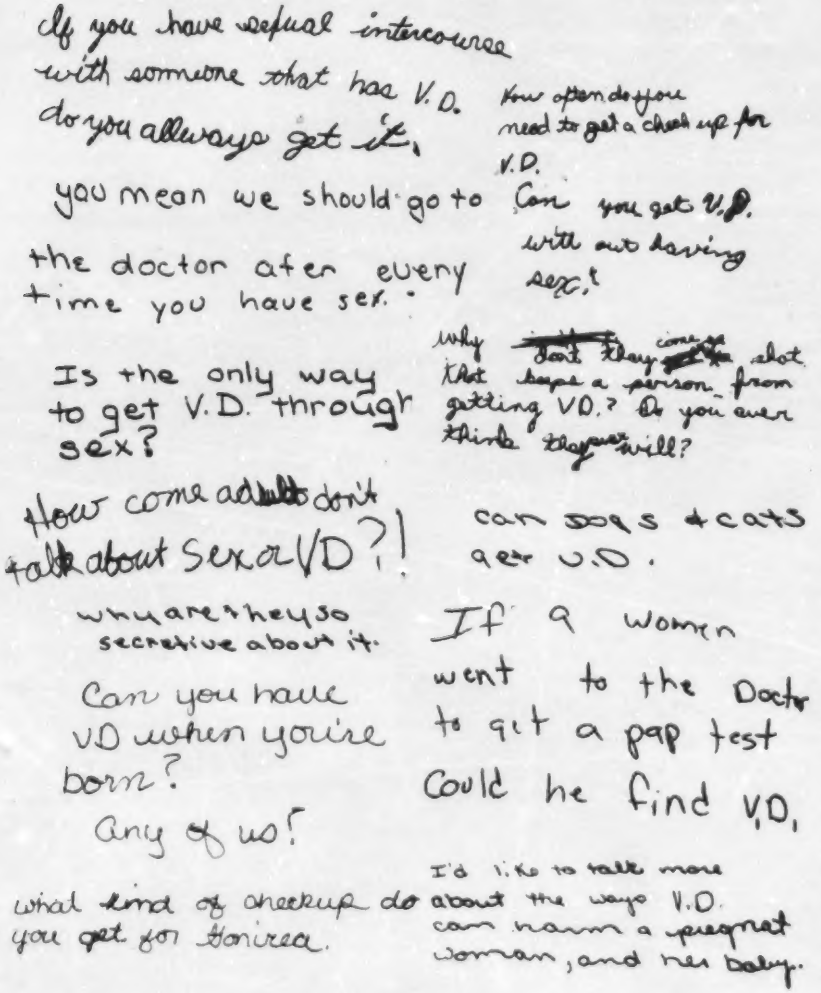
a. Assign some students to write articles about venereal diseases for the student newspaper. Articles should be accurate and of interest to the school audience.
b. Some students could make posters, bulletin boards, murals for the entire school. Make use of all available wall space in restrooms, cafeteria, halls, etc.
c. Every student could make a bumper sticker — colorful, brief pertinent — they might be plastered on mirrors, lockers, notebooks.

5. You don't consider yourself "sexually active," but you have been having sexual intercourse with your steady boy friend — just him — for almost a year. Now you find you have a vaginal discharge you never had before. It doesn't hurt, or anything. Surely it couldn't be VD?

(Discuss importance of education in recognizing possible symptoms and in seeking routine STD exams.)

NOTE: Some teachers hesitate to launch a VD awareness campaign on grounds of propriety.

If calling VD by slang names (clap, strain, drip, dose, gleet, Jack for gonorrhea; the lues or the pox for syphilis) captures the attention necessary to convey an informational message, then the lapse in taste can be justified. For example, the American Medical Association published a poster in red on white bearing the message: "Don't screw around with it" and in smaller type below, "VD is dangerous" followed by the address of the local VD clinic.


If you have sexual intercourse with someone what has V.D. do you allways get it,
you mean we should go to the doctor after every time you have sex.
Is the only way to get V.D. through sex?
How come adults don't talk about Sex or VD?!
why are they so secretive about it.
Can you have VD when you're born?
Any of us!
what kind of checkup do you get for Gonirea.
How often do you need to get a check up for V.D.
Can you get V.D. with out having sex,?
why don't they come up with a shot that keeps a person from getting VD.? Do you ever think they will?
can dogs & cats get V.D.
If a women went to the Doctor to get a pap test Could he find V.D,
I'd like to talk more about the ways V.D. can harm a pregnet woman, and her baby.

DISCUSSION TOPIC IV.

List possible reasons for the epidemic rise in gonorrhea infections at a time when other communicable diseases are under control.

SUGGESTED CLASS ACTIVITY

(Again, with students fully familiar with VD, a teacher may choose to discuss STD under this discussion topic.)

Group activity: have students list the reasons for the increased rate of gonorrhea; e.g., pill, permissiveness, promiscuity, etc. Groups may illustrate their theories by developing posters, skits, audio and video recordings, by role playing or mobiles. Allow students to present their illustrations to the class, and let class members respond to the appropriateness to the theory, or its illustration.

QUESTIONS TO CONSIDER:

1. You are sexually active and you are scheduled to see your doctor for a routine physical examination. Should you ask for venereal disease tests as part of your regular physical exam? If not, why not? What are the chances of your doctor doing the appropriate tests without your asking for them? (It varies according to the doctor. The only way to be sure is to ask for the specific tests.) Would you prefer going to a public clinic? If so, why? Discuss the problem of many or even most women being asymptomatic, and how women should deal with it. Some men are also asymptomatic. Discuss how they should deal with it.

(Discussion of the latter two issues should clarify that they contribute heavily to the epidemic. Tables showing the sex distribution of VD often underrepresent women, probably because of this fact. See "Venereal Disease, A Resource Guide," *'78 ed.* p. 84.

Frequent VD check-ups for women and for men who are sexually active with many sex partners is a sensible health measure dealing with the fact that many men as well as women do not show early symptoms of VD.

Consideration of the problems implicit in a lack of symptoms will show clearly the importance of informing and checking all sex partners in case of infection.

This problem assumes even broader dimensions when the risk of infection by the other STD is also considered.)

2. Discuss the effects which VD may have on family members and loved ones and on the relationships involved. What if you were very much interested in a person you had been dating; however, after making love for the first time, you discovered this person had given you a venereal disease. How would you handle it?

(Discussion should include values such as honesty, commitment, trust and good health in interpersonal relations.)

3. You are a sexually active girl who has just been told by a contact that you might have gonorrhea. There is no free clinic in your area. Should you see a doctor? What course of action should you follow?

(Many of the issues discussed under previous questions will recur here; responsibility for personal and community health; a little embarrassment is preferable to alternative consequences risked; elicit from students suggestions of how they would find a treatment center in a strange town or city.)

Have the class conduct a discussion about why gonorrhea is so much more severe a problem than syphilis, in terms of the number of persons infected.

Some relevant factors:

- time frame — gonorrhea spreads faster
- no blood test for gonorrhea
- many asymptomatic cases of gonorrhea
- many people take syphilis more seriously than gonorrhea

4. You are a sexually mature and informed teenager, but have made a conscious decision not to have sexual intercourse until marriage. How do you feel when it seems as if practically everyone but you is sexually active? What kind of support would you like to help you stick by your decision? What kind of support can you offer others in your situation?

(Discussion might deal with making a health decision based on reliable information prior to the time emotions become involved; once a decision is made, support and peer pressures assume far less importance. Other discussion subjects here would be individual differences in values, needs, priorities and respect for individual freedom and personal privacy.)

Concluding Activities

Administer post test.

Make sure any important gaps or misunderstandings are rectified.

Pass out to students brief course evaluation forms.

SAMPLE FORM:

What did you learn about venereal diseases from this unit?

How to catch them? Yes_____ No_____ Already Knew_____

How to avoid catching them? Yes_____ No_____ Already Knew_____

What to do if some day you should suspect you might be infected. Yes_____ No_____ Already Knew_____

Did you find this unit interesting? Yes_____ No_____

Other comments: _____

_____

Do you feel that this unit has influenced your attitude toward sexual intercourse? Yes_____ No_____

How? _____

_____

Are you more aware of the responsibilities involved? Yes_____ No_____

Are you inclined to be more selective about sex partner(s)? Yes_____ No_____

RESOURCE

"Venereal Disease, A Resource Guide" test, pp. 36-41 or make up your own, using manuals such as "VD Handbook" and "VD Facts You Should Know" listed on p. 30 of "Venereal Disease, A Resource Guide" as aids.

Appendix STUDENTS' QUESTIONS

Students' questions typically range from the naive to the audacious — and all are imbued with a desire to learn.

They should be answered frankly and simply. A teacher should admit to not having all the answers, and where appropriate, promise to research the subject and return with the answer by the end of the VD unit or assign a student to research it.

The following questions actually asked by seventh and eighth graders have been categorized as follows:

1. Answered in text of Teachers' and/or Resource Guides
2. Related to material in the two publications
3. The inevitable ones from left field

Category 1 ANSWERED IN TEXT

Do you get all types of venereal diseases in the same way?

How did VD get started in the first place?

Can they tell who had it first, a boy or a girl?

Can you get VD from kissing, if neither has a shanker near or around the mouth?

When a girl is on the pill, can she get VD? (Resource Guide, p. 11)

Do people who never have sex get VD? (No)

Is there any way you get VD without having sex with an infected person? (For practical purposes, no)

How long could you have VD before you know it? (Months, if asymptomatic)

Can you get VD again while being treated for it? (After treatment, yes)

What do they do for VD check-ups? (Teachers' Guide, p. 39)

If a woman went to the doctor to get a Pap test, could he find VD? (Teachers' Guide, p. 56)

If an uninfected person has sex with someone that has had VD but has been cured, can that person get VD? (No)

How old do you have to be to get VD?

Have you ever seen anyone with VD?

Can people over 30 get VD?

What are some ways you can ask a person if he/she has VD? (Discuss with class; they will have ideas.)

How can you make sure you do or don't have VD after sex? (Teachers' Guide, p. 39)

STUDENTS' QUESTIONS (contd.)

How can you make sure you don't get it? (Teachers' Guide, p. 44)

Why don't they come up with a shot that keeps a person from getting VD? Do you think they will?

How come adults don't talk about sex or VD? Why are they so secretive about it?

Is VD a big trouble in other countries? (Yes, even worse than in the U.S.)

What is a rubber? (Condom: thin protective sheath for the penis, generally of rubber.)

I'd like to talk more about the ways VD can harm a pregnant woman and her baby.

If some woman is pregnant and she doesn't know if she has VD, is there any way she can be checked? (Yes, Teachers' Guide, p. 39)

Category 2
RELATED MATERIAL

How many other types of VD are there? (Apart from syphilis and gonorrhea, the main sexually transmitted diseases are listed on pp. 20-27.)

Are the others as dangerous and harmful as gonorrhea and syphilis? (Could be, especially genital herpes)

How can a boy get VD from another boy? (People engage in varieties of sexual practices; penis to vagina; penis to rectum; penis to mouth.)

If you have sexual intercourse with someone who has VD, do you always get it? (Not always, but it's impossible to predict)

Is having sex the only way to get VD? (For practical purposes, yes)

If you have sex with a person and don't get VD and then have sex again with the same person, is it possible you can get VD the second time? (Yes)

How does one contact VD in the mouth? (Penis or vagina to mouth)

If a girl would have her period within one day of sexual intercourse, would it help prevent VD? (No)

Do the symptoms of gonorrhea recur? (If treated and cured, symptoms do not recur unless the person is re-infected.)

What if it hurts when you urinate but no liquid stuff comes out but after a couple of months it quits hurting? (This is a reason to suspect STD infection; you should get checked.)

STUDENTS' QUESTIONS (contd.)

Can you get VD and pregnant at the same time? (Yes)

What are the chances of getting VD? (A high school student in Iowa has a 1 in 10 chance of getting gonorrhea by his/her 25 birthday.)

How often do you need to get a check for VD? (If you are not sexually active, never; if you are not selective in your sex partners, then frequently.)

Would it cost money for the treatment for VD at a doctor? (Yes)

After a person had VD, should he/she go for a check-up regularly just in case they get it again? (If they continue to have multiple sex contacts, yes.)

Can you get VD from masturbation? (No)

How many kinds of birth control are there? (Pill, condom, diaphragm, IUD, rhythm, etc.)

Can you get VD from oral sex? (Yes, bacteria live in the mucous linings of the mouth and genitals.)

How do two homosexuals transmit VD? (Penis to mouth; penis to rectum)

Does sex harm a person? (No)

If you are born with VD, when will signs show up? (Gonorrhea may show up as infection in baby's eyes immediately, leading to blindness; syphilis may show up immediately in stillbirth, or later in insanity, etc.)

If a person has VD and is having a baby, can they have the baby through an operation? (In cases where the mother contracts an infection of genital herpes during the final weeks of pregnancy, a caesarian section is performed to deliver the baby so as to avoid its exposure to infection in the birth canal. Where the mother has gonorrhea or syphilis and has been treated early enough in her pregnancy, the baby will not be infected.)

Category 3
SIDE ISSUES

Can animals get VD? (Not syphilis and gonorrhea; but some animals get diseases which are sexually transmitted; however, they are not nearly as frequent or as much of a problem as is VD in humans.)

How do you tell if you are sterile? (You can't; a doctor would have to test.)

I've heard that when a man is impotent (or something like that) they can't have sexual relations. If so, why can't they? (True; inability to have an erection due to a variety of causes.)

V.D. - THE VICIOUS CHAIN

This stark and shocking account of the work of one public-health investigator explains why a dread disease, once nearly eradicated, is again on the rise.

Fred Warshofsky

Facing each other in a small office in Newark, N.J., were a young man and a teen-ager. The man was Tim Lindman, a 27-year-old ex-basketball player from the University of New Hampshire, who has one of the most important public-health jobs in the United States. Tim is a venereal disease investigator, one of hundreds trained by the U.S. Public Health Service. He is now assigned to the Newark Health Department. More precisely, he is an epidemiologist, whose specialized, vital task is to trace the chain of venereal infection from patient to patient until all contacts have been unearthed and treated. It is a tough demanding job that leads to bars, plush apartments, split-level houses, street corners, brothels and, alarmingly, schools and playgrounds.

The youth he was talking with that day was a 16-year-old I shall call Victor. A test had revealed the presence of reagin in Victor's blood. Reagin is an antibody manufactured by the body in response to an invasion of *Treponema pallidum*, the organism that causes syphilis. There were other signs too, indicating secondary syphilis. He was immediately treated with penicillin and sent to Tim Lindman.

Lindman represents the most vital part of the nation's venereal disease program, the contact interview. Syphilis is a wildly infectious disease. Lindman's task was to find all those people who might have been infected by Victor and who might themselves now be capable of spreading the disease.

"Victor, the doctor says that you have syphilis," Lindman began. "You may know it as bad blood, syph or by some other term. It is a venereal disease, and virtually the only way a person can contract it is by sexual contact with an infected person."

At this, the youngster leaned forward to object, but Lindman waved him into silence. "The germ that causes the disease cannot live outside the human body for more than a few seconds. So it is impossible to catch the disease from a toilet seat or a dirty drinking glass.

"Now, we've started you on a course of treatment and you will be cured, but what about the person you caught it from? And you may have given it to other people before coming here. That is what I would like to talk to you about. Since last Christmas, how many different girls have you had relations with?"

Lindman's choice of Christmas as a starting point was deliberate. It was almost exactly six months earlier, a critical period during which Victor was in a highly infectious stage of disease.

"I can't remember," the boy said angrily.

"Come on, Victor, surely you can take a guess. Was it 20 girls, 50?"

The youngster grinned. "No, it was more like five."

"All right, let's talk about those five girls. This interview is confidential, but we must know the names of all the people with whom you had contact so that we can help them before the disease permanently damages their health and before they can spread it to others."

"Okay. The first was Lila. That was the day after Christmas. We were at a party and —"

The interview continued for another half hour. Before it was ended, Victor had supplied ten full names — girls with whom he had had sexual relations. Their ages were between 12 and 17.

The information provided by the youngster set Tim Lindman on a trail that eventually led to 96 other teen-agers, in all parts of the city and as far away as South Carolina. Eighteen of them had syphilis. Tim Lindman's sleuthing prevented countless other younsters from catching the dread disease.

Because of its mode of transmission, syphilis has long been a taboo subject in most American homes. Few schools offer any information. This basic lack of knowledge, coupled with increasingly casual sexual behavior, creates a climate in which venereal disease can spread like a raging fire over the land.

Each year syphilis kills 4,000 Americans, and in 1962 it infected a reported 20,000. Moreover, a recent survey conducted by the American Social Health Association in cooperation with the American Medical Association revealed that almost 90 percent of syphilis cases go unreported. Expert opinion suggests that possibly 1,200,000 people are now afflicited with untreated syphilis.

The microbe passes from one person to another only through the mucous surfaces of the genital tract or mouth, or through a break in the skin. Once these delicate, spiral organisms get beneath the skin or mucous membranes, they enter the lymph capillaries and are gently floated to the nearest lymph gland. Here they roost, multiplying and growing. Within a short time they continue the journey, passing into the bloodstream, which whirls them to every part of the body. Eventually the pale, flexing microbe has burrowed deep into the internal organs. The attack is swift and secret, for not one outward sign of the disease's course has been displayed.

Now firmly entrenched, syphilis commences its malignant, extensive and prolonged destruction of tissue, bone and organ. Usually about three weeks after infection the first sign appears — a chancre, or sore, at the point of contact. About nine weeks later, lesions and rashes pit the body, and syphilis is now in its most infectious stage. A sore throat, swollen lymph glands and fever often accompany the skin eruptions. Singly or collectively the symptoms may resemble those of any one of a dozen other diseases.

These signs vanish of their own accord, but the disease lies hidden and enters the final two stages — latent and late syphilis. The disease may slumber quietly within its host for many years. Then with little or no warning it launches a debilitating attack, perhaps on the nervous system, destroying the body's psychomotor functions. It may mount the spinal column and erode the reasoning centers of the brain, causing insanity, or it may attack the optic nerve, pitching its victims into blindness. The *Treponema* may invade the cardiovascular system, inflaming the aorta and other coronary arteries. Death often results.

In 1910, a reasonably effective method of treating syphilis was discovered: Salvarsan, a preparation of organic arsenic. But the cure took 18 months. Then, in 1943, Dr. John Mahoney, a public-health researcher, found that penicillin completely routed the *Treponema*. This quickly became the standard treatment for syphilis. The recommended course in the early stage of infection is 2,400,000 units of penicillin injected in one dose. By 1954 an all-out educational treatment and investigation campaign sent the number of cases plummeting toward the elusive goal of complete eradication.

But since 1957, syphilis has made a stunning comeback. One of the reasons was stated by Dr. William Brown, chief of the Venereal Disease Branch of the Communicable Disease Center in Atlanta, Ga.: "As a program for control of a disease approaches the end point, meaning eradication, it is not the disease but the program that is likely to be eradicated." Funds from federal, state and municipal governments were sharply reduced, and the diseases made new gains. Against the rising tide of syphilis, epidemiologists such as Tim Lindman struggle to break the chain of infection.

Lindman moved rapidly to round up the contacts named by Victor. Of the ten girls, four were found to be infected. Another one had gone to visit in South Carolina. "I gave the information to the State Health Department in Trenton," said Lindman, "and they phoned the South Carolina department. Within two days the girl had been found. She was infected, and they treated her there. She named four sex contacts, all in Newark."

Soon Lindman was working with several dozen boys and girls in a chain of infection that seemed without end. "The five infected girls we got from Victor provided us with 18 more names. We were lucky, though — only two of that group were infected. These two boys named another 11 girls, with three infections. They in turn led us to 15 more contacts, but again we were lucky. Most of the boys had been with them just before they had picked up the infection, and we found only one positive in this group."

At this point, the epidemiological chart that Tim Lindman was drawing began to take on the appearance of a huge, somewhat misshapen Christmas tree. "I was beginning to hope we were nearing the end, for the boy I was then interviewing, Frank — No. 11 on the list of infections that could be traced to Victor — was certain about the number of girls he'd had relations with during the infectious period — five."

Lindman located the five girls and brought them to the clinic. Blood tests revealed only one infection.

"I had my fingers crossed at this point," recalls Tim. "If only that girl had not been too promiscuous, we might have stopped it right there." But she named seven contacts. Wearily, Tim went after the new crop. Six of them were free of the disease. The seventh was Victor.

"I lit out after him and brought him down to the clinic. The two of us sat in the interview room and waited for results of the blood test. He had finished his treatment the first week in July, and the date of this exposure was the middle of August. There was a chance that enough penicillin was still in his bloodstream to prevent reinfection."

The slim chance vanished — Victor's blood test again was unquestionably positive. The chain of infection he himself had started had twisted around to reinfect him. What was more, he named five new contacts. They undoubtedly would name still more, and the chain would stretch on and on. Would it ever end? Tim Lindman headed for the first address.

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Glossary

Antibody - a substance produced by the body of an infected individual for defense against the disease organisms.

Antigen - any substance which is capable, under appropriate conditions, of inducing the formation of antibodies and of reacting specifically with the antibodies so formed.

Attenuation - a process whereby the infectious agent (usually a virus) is altered to modify its pathogenic effect without altering its antigenic properties.

Immunity - the quality of being able to resist disease; commonly, the condition of being able to resist a specific disease, especially through preventing the development of a pathogenic microorganism or by counteracting the effects of its products.
Passive immunity is either acquired naturally by maternal transfer or artifically by inoculation of specific protective antibodies (e.g., immuno serum globulin for hepatitis A). It is of brief duration — days to months.
Active immunity is attained naturally by infection (with or without clinical symptoms) or artificially by inoculation of the infectious agent in killed or attenuated form; or by inoculation of a toxoid (e.g., killed bacteria are used in pertussis [whooping cough] vaccine; measles vaccine is made of live, attenuated virus). Lasts months to years, sometimes virtually for a lifetime.

Incidence - the number of new cases of a specific disease occurring during a certain period of time.

Incubation period - the time interval between exposure to an infectious agent and appearance of the first sign or symptom of the disease.

Infectious agent - a micro organism, such as a bacterium — or it may be a virus, fungus or even an insect — which is capable of causing infection.

Mode of transmission - any mechanism which exposes a susceptible host to an infectious agent. (1) May be direct by skin or sexual contact; (2) May be indirect by means of contaminated object, food or milk; by insect; airborn droplets as those from a sneeze settling in respiratory tract of host or fungus spores in dust.

Period of communicability - the time during which an infectious agent may be transferred from an infected person to another person.

Prevalence - the total number of cases of a specific disease at a certain time.

Reservoir - any habitat in which an infectious agent normally lives and multiplies - human beings, animals, plants, soil or water. Any of these may be the reservoir of a specific infectious agent.

Glossary (contd.)

Resistance - the body mechanisms which create barriers to the progress of invasion or multiplication of infectious agents.

Susceptibility - condition in which persons do not possess sufficient resistance against a particular infectious agent to prevent contracting the disease if exposed to it.

Toxoid - a bacterial toxin that has been treated to destroy its toxic property but still retains the capability of stimulating antibody production (e.g., vaccines of diphtheria and tetanus are toxoids).

Vaccine - a suspension of attenuated or killed microorganisms or toxoids administered by injection for the prevention of infectious diseases (e.g., diphtheria vaccine is made of diphtheria toxoid, a product of diphtheria bacteria; which has lost its toxicity but retains its antigenic properties; flu vaccine is made from killed flu virus).

Additional Terms

NOTE about phctographs used in the text:

For reasons of confidentiality, models portray public health representatives and VD patients.

Disease microorganisms are shown in individual magnifications, hence their comparative sizes are not conveyed.

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